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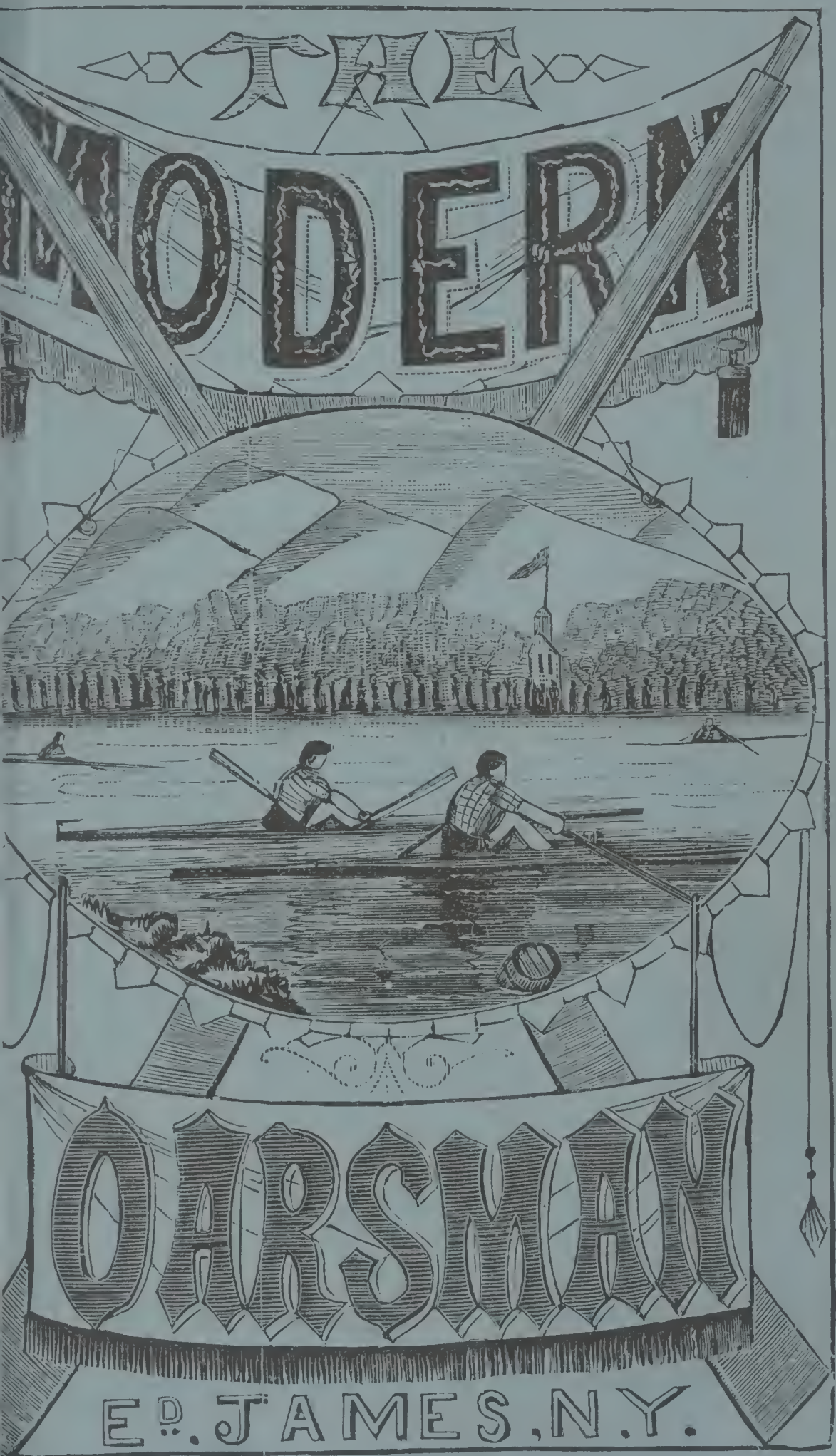
THE
MODERN
OARSMAN
ED. JAMES, N.Y.

THE

MODERN OARSMAN;

A COMPENDIUM OF INFORMATION

ON

ROWING, SCULLING, STEERING,

FEATHERING, COACHING, SLIDING-SEATS,

TRIMMING AND SITTING A BOAT, DIMENSIONS OF WORK,

ANALYSIS OF FAULTS,

TOGETHER WITH THE

PRINCIPAL SCULLLNG MATCHES AND CHAMPIONSHIP CONTESTS TO DATE

IN BOTH HEMISPHERES;

PORTRAITS OF THE MOST NOTED OARSMEN OF THE WORLD;

RULES OF BOATING, PROFESSIONAL and AMATEUR, Etc.

COMPILED BY

ED. JAMES,

AUTHOR OF "PRACTICAL TRAINING," "HEALTH, STRENGTH AND MUSCLE," "MANUAL OF SPORTING RULES," "BOXING AND WRESTLING," "INDIAN CLUB AND DUMB-BELL EXERCISE," "THE GAME COCK," "TERRIER DOGS," ETC., ETC.

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PREFACE.

THE publication of the present volume is due to a settled conviction upon our part that there existed a necessity for a permanent work on the subject of ROWING, at a reasonable cost, and obtainable at all times. It is by no means the first nor the only treatise of this nature in book form, nor is it likely to be the last. "Annuals," unless backed up with sufficient paying advertisements to cover the expense of getting up, have gone from our gaze, leaving the work begun unfinished, and, consequently, a void which needed filling. We, therefore, have undertaken to meet this want by a compilation of the best theories from the best authorities, interspersing the reading matter with portraits from life photographs of the most noted oarsmen of the present century, many of which appear now for the first time. This was an expense no one cared to incur heretofore, no matter how enthusiastic otherwise, and we believe our having done so will be universally appreciated, and, in due course, remunerated.

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EDWARD TRICKETT.

From a Photograph taken in Sydney, Australia.

JOSH WARD.

From a Photograph by O'Neil, New York.

THE

MODERN OARSMAN.

INTRODUCTION.

We believe boat-rowing extended back and was identical with the time of the first sailing craft; no matter of what description. Fishermen have always existed, and it is pretty certain they did not depend on the sails alone in following their calling. The Africans, Indians, and other untutored savages have always been skillful boating men in their way, that is, propelling their canoes by means of one oar, and paddling or sculling from the stern of the boat, not as in modern sculling by means of a pair of sculls.

The ancients conducted their maritime wars principally by means of gigantic row-boats, manned by brawny athletes. Later on, when civilization introduced "men-of-war" ships, the boarding and capturing of an enemy's vessel was done by their crews rowing in open boats, exposed to the cannon's fire, and going into the very jaws of death. From these facts, nothing was more natural than that, in times of peace, the marines and sailors should practice rowing very extensively, both for recreation and usefulness.

In Cleopatra's time (B. C. 50), while men were not as proficient in rowing as our oarsmen are at the present time, there has certainly never occurred such a magnificent turn out as the one of that celebrated woman. The deck of Cleopatra's barge was adorned with gold, and its sails were purple. The oars, of which there were about twenty, were set with silver, and the rowers kept time to the sound of flutes and lyres. The figure-head of the barge represented a dragon's head and was most elaborately carved. The masts, of which there were two, were sur-

mounted by golden crowns, and the entire craft was constructed and adorned in a style surpassing description.

It was a move in the right direction when the two great English Universities Oxford and Cambridge, in June, 1829, introduced their annual boating contests, which was followed twenty-three years later by Harvard and Yale; for at the present time nearly every University in the world, accessible to rivers and lakes, has its boats and its boat-crews, thus giving to rowing a prestige no other athletic sport ever enjoyed.

In our effort to make rowing (which accomplishment both sexes can acquire) more popular, and still better understood in all its details, we would state that, without practice on the water, no one can ever expect to become an oarsman by simply reading one or all the text books—therefore, let each avail himself of putting into practice the principles laid down in theory, and success will surely follow.

FIRST PRINCIPLES OF ROWING.

A GIG, slightly outrigged (says W. B. Woodgate, author of "Oars and Sculls"), is the best in which to teach an utter tyro, unless one be found with considerably more beam than the ordinary length of an oar in-board. Ordinary in-rigged gigs have but little to spare between the thowl and the handle of an oar when laid in the rowlock, and a beginner, who is at all awkward with his elbows, or draws his button away from the rowlock in recovering (a most probable fault), stands in jeopardy of a knock on the funny-bone or knuckles against the opposite thowl-pin, which fidgets him nearly as much as a touch of the splinter-bar upon the hocks would a colt in harness. The oar should be carefully examined. It cannot be too good or too "true," *i. e.*, lying square in the rowlock. A good oarsman will adapt a bad oar to circumstances, and still make it go true. A tyro adapts circumstances to his oar, and moulds his earliest style thereby. The oar should neither be weak, or it will go deep, nor hog-backed (as builders often turn them out for sake of stiffness), else it will fly out of water till the strain has straightened it; and, lastly, the loom should be true and square, which is often not the case, and oarsmen puzzle to know why they row deep with such an oar.

The rowlock also should be examined. In most hack gigs the width between thowl and stopper is not sufficient, and the oar "locks" to a full reach forward. Also, if the rowlock has been used much, the upper part of the thowl, instead of being flush and "proud" (*i. e.*, raking slightly forward), will often have a groove in it, transverse to the perpendicular of the thowl, especially where it has been used by one who feathers at all under water. Into this groove the upper angle of the loom of the oar lapses, and the blade slopes in the water and sinks deep. Any such groove should be filed away at the outset. Again, a weak iron often gets pulled out of shape, the sill of the rowlock sinks at the thowl end, the loom of the oar thus rows uphill, and the blade sinks too deep; or the button gets worn, so that the outer flange of it no longer presses against the thowl after the first grip, but leaves it when the oar approaches its right angle to the rowlock during the stroke.

Stretchers are, as a rule, made too perpendicular; this alone, apart from the early difficulty of clearing the knees, teaches beginners, if left to judge for themselves, to set their stretchers too long, so that the heel may reach the board without cramping the flexor tendon of the foot that runs down the shin-bone. The addition of a piece of wood under the heels will remedy the fault of the builder.

A beginner should learn with a rowlock one inch, or more so, higher, compared with level of seat and water, than would be his work in a racing-boat. When he has once learnt to clear his knees, and avoid crabs, it will be time to lower his work. At the same time the rowlock should never be so high as to throw the strain almost entirely upon the arms, and to obviate use of the loins, as in a sea-boat. The stretcher-strap should hold *both* feet, and it is best if each foot is in a separate loop. A man who has rowed much should have developed sufficient strength of abdominal muscle to enable him to do ordinary gig rowing without a strap, and yet not to double over his oar or to hang in recovery. But till that muscle develops it is best to supply the strap at all times, lest the beginner should learn to meet his oar, or be unable to row the stroke out for want of power of recovery from beyond the perpendicular. If, however, it is seen that he tries to recover solely with the instep from the strap, and not also with the muscles of abdomen, loins and thighs, his strap may in such a case be taken away for a short time to compel him to use all muscles requisite for a good recovery.

The strap should be tight enough to grasp the foot, instead of pinching it.

The seat in the boat, *i. e.*, the way in which to sit in a boat, requires careful inspection, and yet is one for which a definite rule cannot well be laid down. Some of the best oars sit almost on tiptail; some, *per contra*, sit at least three, if not four inches on the seat. Much depends upon the depth at which the hip is set up the body, along the flank, and consequently upon the play of the joint on the seat. A man must regulate his seat to some extent according to his make and shape; but, if a nominal depth of seat is to be laid down for a tyro, it may be three inches for a heavy weight to two and a half for a light weight. But in any case the oarsman should sit square, as if he were unconscious which side he was going to row. His oar-handle should overlap the outside of his chest about one inch (on a fixed seat). If he sits square, plants his feet square, and sets his hands square, he will have no excuse for not rowing square. The heels should be together; the straps should allow of this, but the toes should slope outwards.

More depends upon the grip of the oar than most are aware of. Half the faults in a crew may often be traced to a faulty grasp. Now, as the stroke is rowed through, the angle of inflection of the wrist gradually alters. At first the whole arm and wrist are extended in a straight line. When the arms begin to bend at shoulder and elbow, towards the latter part of the stroke, the wrist has to accommodate itself to the flexion of the other joints, so that the knuckles and palm may constantly remain in the same plane, and with them the blade of the oar at the same constant angle to the surface of the water. To effect this, the wrist has to bend, not only perpendicularly, but also laterally; for the elbows, as they pass the ribs, are wider apart than when extended at the commencement of the stroke; and as the hands (as will be seen presently) do not grasp the oar at a width apart equivalent to the width of the ribs, and have, moreover, to keep always flat to the handle of the oar, the angle of which to the body is constantly changing, the angle of the wrist must vary also laterally as well as perpendicularly; that is, the palm of the hand must remain in a constant position, though the position of the arms is inconstant, and the wrist is responsible for the arrangement.

If a man clenches his fist tight, and then tries to shake his hand from the wrist, he will find the latter joint cramp-

ed instead of limp, as required for the operation. Again, if a man wishes to hang by his hands from a bar, he will do so from the two upper joints of his fingers, hardly bending the lower knuckle joints at all. If he essay to clench the bar he will only cramp his grasp and weaken his powers of suspension. These two points will show the folly of grasping the oar with the whole hand, and the impolicy of using, to a tyro, the too common expression "Grasp your oar firmly" as liable to misinterpretation. The hands should be placed upon the oar rather less than a hand's breadth apart—about three inches. Thus the two upper joints of the fingers should perform the grasp, the lower joints being left nearly straight. The hand should not hold the oar as if squeezing a sponge. Then the thumb should close and grip, but only so far as it can without compelling the lower joints of the other fingers to join in the grasp. The latter joints should bend only so far as to accommodate themselves to the roundness of the oar; hardly at all, in fact. The grasp thus attained is quite strong enough for all rowing purposes. The lower part of the palm of the hand and the ball of the thumb should not touch the oar at all. The hands will thus be in that position which gives freest play to the wrist of any grasp, and also in that in which a man, if intending to hang his whole weight upon a bar, such as the handle of his oar, would instinctively adopt.

The absence of cramp in the grasp and the free play to the wrist thus attained will facilitate the action of the feather, and will, by enabling the oarsman to accommodate his wrist without cramp or hindrance to the variations of angle of the other joints of the arm, and of the oar handle, keep him clear of much of that want of command of oar and of rowing deep which is the bugbear of beginners, and which is to a great extent to be traced to the erroneous manner in which they are taught to "grasp" their oars.

It is true that some men prefer to hold the thumb of the outside hand over the oar, instead of underneath it, but there ought to be no choice in the matter; both thumbs should be underneath (in rowing). Both hands, both arms, both shoulders, each loin, both legs and feet should bear an equal strain throughout the stroke. The physical exertion of each side of the body, and of the members belonging to it, should be equal while rowing the stroke through. But though the *physical* strain is equal to both hands, it is true that the *mechanical* power of that hand

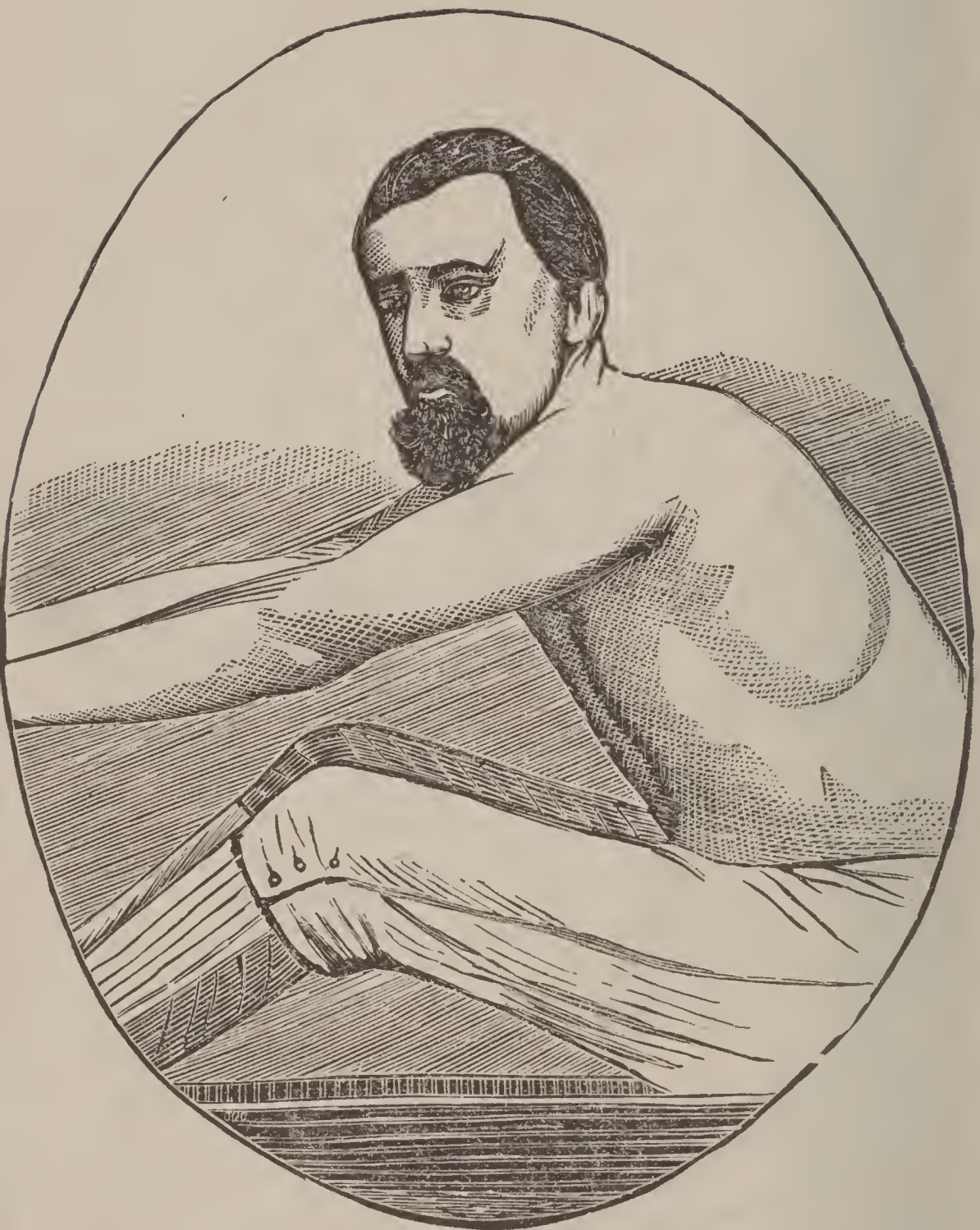
which is farthest from the fulcrum is the greater of the two. In that sense the outside hand does most work, in that its work, though equal to that of the others, is expended to greater advantage. The oarsman should sit square. His shoulders should be set well back and stiffened. Any attempt to stretch them as he reaches out, and so to add to his reach, loses more than it gains. When an oarsman is told to reach out "square," it after all comes to reaching as square as he can, and that is all. The best form that ever rowed always "gave" a little, however little, to the side on which he rowed. From a front view his shoulders would look square enough, but from behind it would be seen that the two shoulders were not quite in the same position, for the arm of the one is stretched away from, and the other across the body, to follow the arc of the oar-handle at the commencement of the reach. But this concession, that absolute sculptural squareness is not to be looked for in the reach forward, must not be taken as any excuse for bending one shoulder or rowing across the boat —too common a fault with many good oars.

Cushions are now almost obsolete, and even those who once swore by a new wash-leather cushion to row upon, do not now lament the abolition. True, the seat is harder, but though, till the bones get accustomed to it, that is rather uncomfortable, the "raws" that used to be the bugbear of so many practical oars when rowing in a rolling boat are now seldom complained of. Moreover, by sitting lower without cushions the tyro is enabled to row with a lower rowlock, and to lower also his centre of gravity, and therewith to reduce the propensity to roll. A wet cushion would draw and rub raw even a man who, on a dry one, never encountered a "raw."

THE REACH.

The usual manner in which a beginner is taught to row is by setting an experienced oarsman in front of him, and telling him to copy his action, admonishing at the same time each error as exhibited by the beginner in his attempts to copy his model. A man who has never rowed has been accustomed to use his arms, and arms only, for all purposes of moving or controlling heavy weights, and accordingly the first instinct of the beginner in rowing is

JAMES HAMILL.



HARRY KELLEY.

From a Photograph taken in London, Eng.

to attempt to move the oar with his arms. The use of his back, loins and legs with him is only secondary. The use of the arms in rowing is too natural not to come sooner or later, when once called into play, and a tyro learns quickest how to make most use of those parts of his frame in which his greatest strength lies, if taught at first to move his oar without any action of the arms, simply from his back and loins. The man who finishes his stroke by aid of the *biceps* infallibly dog-ears his elbows, and sticks them out at right angles to his ribs, giving a weak as well as a cramped and ugly finish. The stroke should be finished with the shoulders and the muscles that work them, and the biceps should be passive throughout the stroke. The best way to make a man use his shoulders instead of his biceps is to accustom him to feel a strain upon the former. Therefore, having got a beginner on his seat, and having taught him how to hold his oar, let him be made to reach well forward, with the boat at a dead pull—no "way" upon it—and then to row a stroke solely with body swinging and legs driving against the stretcher. The arms need not at first be bent at all, but kept out rigid, like taut ropes coupling the body to the oar. The heavier the boat is at this period the more will the beginner appreciate the novel use of his legs and loins, from the resistance to them. An extra sitter in the boat is a gain in this respect. If the boat runs too light, and the oar comes too easily through the water, the pupil finds no resistance that his arms cannot easily overcome, and at once instinctively tries to do his work with them. Besides, by thus keeping the arms rigid, the oar is sure, if truly held at first, to remain square in the rowlock, so that there is no rowing deep, a fault that is sure to result if the arms are at once called into play before the wrist has learnt to accommodate itself to the variation of angle referred to elsewhere. After a few minutes' body work of this sort the finish of the stroke with the shoulders may be explained, and copied by the pupil from the model in front of him. But from day to day, as the lesson commences, a few body strokes, with rigid arms, should be rowed to start with, to recall the use of the loins, till the pupil has learnt thoroughly to depend upon that part for the strain of the stroke.

THE FINISH.

The finish should always be taught separately. Let the pupil be shown the proper action, and made to copy it without an oar in his hands; by setting his arms out straight in front of him, knuckles uppermost, then swinging them into his chest by use of the shoulder muscles, bending the elbow-joint as the arms come in, so as to keep the hands in the same plane, till the *root of the thumb* strikes the chest. Having copied the action properly for a few times, let him sit upright on his seat, repeat the same with the oar in his hand, and not passing through the water at first. Subsequently let him row the finish only, of a stroke in the water, without feathering, but dropping his hands after the chest is touched. When he has done this cleanly, let the two parts of the stroke be put together.

FEATHERING.

The feather, like the finish, is quickest and best taught by commencing without an oar in the hand, studying ing the action only at first; that is, it is by this means most speedily acquired in a clean and perfect shape. If taught all at once faults may creep in from misappreciation of the manipulation, which may take days or even months to eradicate. The thumb at its base should be the part of the hand which strikes the chest at the conclusion of the stroke, knuckles being uppermost; the stroke thus is rowed in the water to the last. Then the hands should drop sharply about two inches and a half, the base of the thumb still touching the chest, and *then*, when by this means the oar has been raised edgeways like a knife out of the water, the turn of the wrist should take place. A few minutes' practice of the action, slowly, with a stick held in the hand instead of an oar, at first, will explain and define the action. Then the three motions—the touch on the chest, the drop, and the turn—can be accelerated in their sequence till they approach the style of an ordinary feather. Then the same should be repeated with the oar in the hands, only just rowing the last foot of the stroke, till the motion becomes handy. Too much attention cannot be paid to a neat and clean feather, the oar coming out of the

water edgeways, and hands dropped *before* they are turned. If the hands are turned before dropped, the oar is turned in the water, and when the hands drop it is pushed up flatways through the water. The resistance of the element causes a strain upon the sill of the rowlock, and tends to drag the boat down on that side. Half the faults in rowing may be traced to a feather under water; the boat, if a light one, is made to roll thereby, and the form in turn is cramped by unsteadiness. Again, the oar does not come off the chest so freely when encountering resistance in the water by being brought out flatways, so that recovery is hampered instead of being elastic. Then, if a man thus hangs at the chest, he wastes time, and has to rush forward in his swing to make up his lost ground. This spoils his swing, and taxes his endurance by the extra exertion of the "bucket" forward, and probably throws him out of time into the bargain. Last of all, the resistance of the oar against the water, when forced out flat instead of edgeways, more or less backs water, and stops the way of the boat. In the same way that a few distinct "body" strokes should during early lessons commence the day's practice, so also should a minute or two of practice of the action of the feather without rowing, to recall the knack before settling down to work. If the knuckles touch the chest *before* the drop, one of two faults must have happened. Either the oar at the moment the knuckles reach the chest is in the water, or is out of it; if in the water, then the action of touching the chest with the knuckles has turned it in the water, it is feathered under water; or if the oar is *not* in the water, the hands have been lowered from their original plane before the oar reached the chest, so as to elevate the oar from the water; in that case the last part of the stroke, more or less, has been rowed in the air, not in the water, and thus every inch of water is *not* made use of; and if the oar is thus out of the water already, a further drop is superfluous. The test of a clean feather is the touch of the root of the thumb against the chest; this insures that at least the oar has remained square to the end of the stroke; and if the hands preserve the same plane till after the chest has been thus touched, the oar will remain not only square, but in the water to the last, and therefore doing work. The drop instantaneously elevates it from the water, and the turn which follows completes the feather. When the hands work the motion quickly the eye will not

detect, by merely watching the hands, any transposition or amalgamation of the motion, but a glance at the oar will answer the question. 1. If the oar is feathered perfectly it comes out like a knife, leaving a small swirl where it has made its exit. 2. If a sort of feathery sheet of water runs off the blade as it leaves the water, it is feathered under water, the hands have turned while the oar is still in the water, and the oar, coming up spoonways, empties its contents as it reaches the surface. 3. If the oar throws a slop of water aft as it leaves the water, the stroke is finished in the air, and a gradual drop of the hands has taken place before the hands reach the chest. That drop has come too soon, the hands have not preserved their plane.

USE OF THE LEGS.

Nothing is more invidious than to tell a beginner, before he learns anything about a stroke, to "kick against his stretcher." If he does so, he is sure to kick too soon, and simply to push himself back on his seat before he has got his oar in the water. The legs instinctively stiffen themselves against the stretcher the instant that the body feels the strain of the oar. They should be kept in this rigid posture, supporting the body throughout the stroke. This rigidity should commence at the instant the oar touches the water, and the strain begins to fall upon the shoulders; not sooner, or the seat is shifted; not later, or the tension of the body slackens for want of support; a passive resistance, co-extensive with the strain upon the body, and depending upon it, commencing and ending simultaneously with it; not a gratuitously aggressive movement, independent of the body. The old and time-honored formula of lifting oneself off the seat with simultaneous use of oar and stretcher, is the best and simplest explanation to a beginner. The lift of the body can only be obtained by simultaneous use of the handle of the oar and of the stretcher; neither strain can in such a case be put on one instant before the other, or there would be no lift. At the same time it must be explained that the legs, while thus supporting the body, do so passively—rigidly—not with any extension of the legs (on a fixed seat). The more simultaneous the rigidity of the legs to the strain on the body, the greater the power of the stroke. A faulty use of

legs consists of—(1) Not sufficient pressure of the feet, or (2) if pressure, not contemporaneous with swing; (3) if pressure and contemporaneous, still not with rigid joints. But though the legs are thus rigid in their action, *i. e.*, do their best to keep rigid, the knees "play" up and down a little, and their increase or diminution of flexion to a small extent, and in a certain manner, is no sign of an improper or unrigid use of the legs. It is simply due to the reason that every man, even on a fixed seat in the boat, rows more or less on a (internal) sliding seat; that the bones of the thigh move fore and aft slightly, with each swing of the body, through their covering of flesh, and the motion of the knees is only the result of the instinctive accommodation of the muscles to this slight movement of the basis of operations, while they maintain meantime the rigid pressure or prop of the feet against the stretcher to support the action of the body. While thus acquiring the proper action of the legs—at the right instant of time—the pupil's stretcher should be set about an inch longer than would be used by a more experienced oarsman of the same size, on the same principle that his rowlock, as explained previously, should be a trifle higher, so as to avoid all fouling of the knees, till he has acquired some command of recovery and watermanship. When he has attained that, his work and stretcher will be reduced to the ordinary lengths at which a practical oar can make most mechan cal use of his physical strength.

RECOVERY.

When one stroke has been properly rowed out, the next step is to get forward into the position in which to row another. Much of the value of subsequent strokes depends upon the manner in which the recovery after the stroke is effected. It must be borne in mind that the set of muscles weakest in proportion to the task required of them in rowing are those of the abdomen. In rowing a race they are the first to fail. It is harder to carry the body forward with them, with the oar feathered, against air, than to drive the body back with muscles of loins, etc., when the oar is square against the water. The result of such exhaustion is "rowing short," which is owing, not to such weakness of the loins, etc., that the oarsman, if

once forward, could not row the stroke through still, but to the failing powers of his abdominal muscles, which become unequal to the task of carrying him forward to repeat the stroke. Bearing this in mind, it will be seen that before a man can be of use in a race he must not only develop by exercise those muscles of the abdomen which hitherto have never been thus called into play, but must also learn to economize them, and to use such strength as they possess to the very best advantage. The first thing, therefore, that has to be learnt is to get the hands off the chest, and the arms extended in front of the body as rapidly as possible. Not only does the action give an impetus to the swing of the body, facilitate its motion forward, and open the chest for respiration, but also the position with arms thus extended is that in which a man with such ease pushes away any resisting object in front of him. Let this be shown practically to the pupil. If he wants to push away a man from in front of him with the weight of his body, but his arms intervening and being the means of contact between himself and the other man, he will find that he uses the weight of his body forward to better advantage if he pushes with straight than if with bent arms. This will teach him the importance of doing as much as he can of the work of carrying his oar back for the next stroke with straight arms.

This action of shooting out the hands from the chest and of extending the arms should be rapid for the reasons above shown, but its rapidity should consist of elasticity, and absence of loss of time at the chest, rather than in any hurried rush. The process of reversing the machinery instantaneously, of quickly bringing into play muscles converse to those which have just rowed the oar home to the chest, does not come naturally to anyone, and with some beginners it is a matter of extreme difficulty. Yet it should be overcome, else when the oarsman progresses to a crew he will find himself out of swing with the rest, compelled to rush at the last to make up for time lost in the early part of the recovery, throwing himself out of time and swing, and wasting his own strength by "bucketing." For this reason, as in other instances, recovery of the hands is first made a separate piece of practice. When the manipulation of the feather is mastered, let the practice of it be extended so as to include the shoot out of the hands from the chest after the hands have dropped and turned the oar. This will in time engender elasticity of recovery of

WALTER BROWN.

HENRY COULTER.

From a Photograph by NOTMAN, Montreal, P. Q.

GEORGE BROWN.

From a Photograph by NOTMAN, Halifax, N. S.

the hands, which should come off the chest like a billiard-ball from a cushion, not necessarily with a rush, yet without a hang. However slow the stroke may be, the hands should no sooner have completed their feather than they should have bounded away.

The body as well as the hands should be kept in perpetual motion, like a pendulum, always swinging. This should be carefully inculcated. The muscles of the legs, thighs and loins should all join with those of the abdomen in the recovery, though necessarily the greater strain falls upon the latter. The feet also should draw the body from the strap by which they are held; but if the pupil tries to do the entire work of recovery from the feet, without using the loins and legs to aid, the strap should be taken away for a short time, and he should be taught to recover without it; at first simple recovery, swinging to and fro without rowing, and then a few lessons with the oar without a strap, till he has learnt to use the muscular power which he exacts.

A slight hang of either body or hands must entail extra hurry sooner or later in the swing to make up the lost time. All this causes exhaustion. No man rowing a mile race would stop dead every hundred yards, and then spurt to make up his lost ground. If a man hangs only one-tenth of a second at his chest at forty strokes a minute, he *s ts still four seconds per minute*. The main stress should be laid on the elasticity of the hands, for without them the body cannot recover, except at great waste of power. A man who tries to push his oar forward with his body while his hands remain at his chest, infallibly doubles over his oar as he goes forward, his lungs are cramped, as well as his powers needlessly taxed. Also, inasmuch as even on a fixed seat the knees rise and fall a little with the swing, the quicker they are cleared before they reach their full altitude by a quick shoot out of the hands, the less chance is there of fouling them, especially in rough water, and the shorter need be the stretcher used; thus adding to the physical power. The first part of the recovery should be the most rapid. As the end of the reach is approached, the pace of the swing forward should slacken somewhat in proportion When the first part of the recovery is slow, and the last part, therefore, of necessity a rush, the result is to dip the stern of the craft, especially of a light one. On the other hand, the longer the weight of the body remains back, after motive power with the oar has come to

an end, the more is the "way" of a boat stopped, while, *per contra*, an elastic recovery facilitates it.

As the stroke is about to be repeated the hands must be raised sharply, just as the body commences to throw itself back; thus no part of the stroke is wasted in the air, which is commonly called "clipping" the stroke. If a pupil shows a disposition to clip, it is best at first to point out for a mark some spot on the back of the man in front of him, at which he should aim his hands, instead of diving them down to the seat before him. But if this remedy fails, a rough and ready one can be resorted to in the shape of a rough piece of deal nailed on the top of his stretcher for a short time. He will keep his hands well up then to save his knuckles from being barked by the contact.

CATCHING THE WATER.

In catching the water the beginning of the stroke should be the most forcible part, not only because the body is is then at its greatest physical advantage, but because a light boat, if touched gently before the greatest force is applied, slips away, and offers no satisfactory resistance to the principal strain when attempted to be enforced. This "catch" should be a "drive" from the body, set in motion by the action previously alluded to, as if the whole body was to be lifted off the seat by the joint support of oar and stretcher. The sudden application of full strength to the oar in the water without waste of motion in air is a question of knack, which cannot be expected to be learnt at once; but he who best acquires this knack will make most use of his stroke, supposing the stroke to be, moreover, well rowed through. Herein also is another snare into which men often fall who study a "catch," regardless of its first principles. They catch the water, it is true; but, having caught it, they let it go again instead of carrying out the "drive" thus commenced right home to the chest, with a good swing back, the legs pressing rigidly the whole time. The recovery, though thoroughly elastic, should, especially towards its latter part, be slow, measured and massive, compared to the sudden and lightning dash with which the motion should be reversed, and the swing back commenced with the new stroke. "Slow through the air, but *no hang*, and sharp through the water," should

be his maxim, and this relation of speed of stroke to recovery should be rigidly maintained, even where the pace does not exceed twenty-six strokes per minute. The slower the swing forward the less exertion it causes, and that exertion saved on the weakest set of muscles can be expended on the strongest in driving the oar through the water; and though such a "drive" is individually more exhausting than a "draw," it will command so much more pace out of the boat that the same speed can be obtained by a fewer number of "drives" per minute than of "draws," so that the diminution in number of applications of power per minute atones for the extra exertion required to make them—quality more than makes up for quantity.

"FORM," AND SWING.

Square shoulders, straight swing, elastic recovery, absence of doubling up at the finish, and of hang, and of bucket—all result as a matter of course if the directions laid down previously are carefully carried out. And, last of all, if the feet are placed against the stretcher, with toes pointed apart, so as to open the knees, and the strain of the stroke is done from the loins and legs, the back is sure to do its work with as straight an action as is natural to it. We do not say absolutely straight in all instances, but rather the reverse, if anything.

That man does his work (*qua* swing) to best advantage whose body, when straight at the end of the stroke, makes an angle of twenty-two and a half degrees (one-fourth of a right angle), or even a trifle more, with the perpendicular, the reach forward having been full length. At the same time two things have to be considered:—1. Whether the man is physically capable of maintaining this length of swing back without sacrificing some of his reach forward. 2. Whether his powers of recovery are adequate to the distance through which his body has to be recovered for the next stroke. If both questions can be answered in the affirmative (not only for a short row, but for permanent work and racing) he is a good man. But because he is thus capable, it does not follow that every man has similar powers. An honest oar, doing all the work he can, will soon swing back all he can to get the most in his power out of the stroke set to him. The greatest mechanical

power is when the oar is at right angles to the rowlock. "Work" is not placed at the same distance in all boats, but more or less in all the arms have begun to bend to row the stroke into the chest almost as soon as the oar has passed the right angle to the rowlock. Though the body should continue to swing back till the arms overtake it and the oar reaches the chest, yet from the instant that the elbow-joint begins to bend the stroke greatly decreases in physical power. Yet this diminution of physical power takes place at a time when the mechanical power of the oar is greater than it was at the commencement of the stroke. The further the body swings back, the later is it necessary for the arms to commence their bend, and consequently a greater amount of that work at which the mechanical power of the oar is greater, and is done with still rigid arms, and with use of the body and loins.

In teaching a man to swing back he should be told to hold his head well up. The weight, if thrown back, assists his swing, while if hanging forward it acts in a contrary direction. A very common fault of beginners is to be constantly looking at their chests, as if to see that they are well opened at the finish. It is like a man looking round in a glass to see if his coat fits him behind. Even if it did fit him before, the shape is disordered the moment he turns his head and neck to reconnoitre himself. He does best to allow some other person to inform him of the fit while he holds himself straight; and so with an oarsman—if he wants to make sure that his chest is open, let him hold up his head and trust to being told, at least, if it is not then open.

FAULTY FINISH.

As a sample of how one fault breeds others dependent upon it, let us take that of *finishing the stroke with the biceps* instead of the muscles behind the shoulders. Who ever saw a man who so finished, who did not also hollow his chest more or less, fail to sit thoroughly well up at the finish, and, finally, be irregular in his swing, too slow at first off the chest, with a bucket at the last to make up for lost ground (unless he saved the necessity for bucketing by only reaching out so far as he could without an extra rush at the end of the recovery, in which case rowing short

is substituted for bucket)? The connection of all these faults can be traced. By finishing with the biceps the arm is bent more acutely at the elbow than in the orthodox finish. Then, if the elbows are kept close to the sides, the bend of the arm brings the hands too high at the finish, thus the oar goes too deep—another fault in this variation. If the hands are maintained at the right level, the oar is saved from going deep. This can only be secured by dog's-earing the elbows, for they must go somewhere (the finish with the biceps bends the arm too acutely to admit of both hands and elbows being in correct position—one or other must give place, *i. e.*, take up a wrong position). In either case whether the hands are too high or the elbows too square at the finish, a bad recovery of the hands from the chest results; in the former version from the labor of bringing out a deeply buried oar, in the latter version from the position of the arms at the commencement of the recovery, for a man with his elbows at right angles to his ribs has not half so much power to push his oar away from him as one whose elbows are alongside of his body. The next stage is that the body, instead of being briskly led in its swing forward by the shoot of the hands, has to lead them, and the result of a lurch of the body against the oar, before the hands are well out, is a slouch and hollowing of the chest. All this wastes time in the recovery, and the lost time has to be made up by a bucket at the end of the swing, or a compromise in the way of a short reach, or getting late into the water.

WRONG GRASP.

A faulty hold of the oar is generally at the root of scores of faults—a too full grasp with the whole fist will be deadening the play of the wrist, causing the oar to sink deep, cramping the finish, and so hampering recovery, swing, time, etc. Thus of two pupils both may be rowing deep, both hanging at the chest, both late in swing forward, and bucketing, yet each from a different primary cause.

A loosening of the outside hand of the oar may be sometimes cause, sometimes effect. It may come from dog's-earing elbows, for an arm in this position is very prone to shirk its work at the finish from the inconvenience of its

posture ; or, *vice versa*, the dog's-earing of the outside elbow only, the inside one being finished properly, will be the result of a loosened hand in most cases. The hand being loose, the work of the hand instinctively slackens with absence of work, the impulse to go on with the motion of the shoulder muscles at once vanishes, the hand has to get out of the way and to follow the oar home, and this it does with the more natural motion of a bend at the elbow joint —the joint in such a case must stick out—if the oar is rowed home at the proper depth by the remaining inside hand, or else one hand would be at a much higher level than the other, and both could not be touching the oar. But whichever fault first causes the other, the result is again a sluggish recovery and the usual inference, for one hand cannot do the work of two. A man who does thus is best cured by a change of sides and coaching separately in a pair-oar gig on the changed side. This compels him to use his idle hand when it finds itself on the inside. If the man has rowed on both sides with the same fault, he can be made to use his outside hand by telling him to take the inside hand clear off the oar as he rows into his chest. The idle hand is thus compelled to work. A fault of this sort often becomes so mechanical that a man can hardly break himself of it at first without some such means as this, however burlesque they may seem. "Capping" the oar with outside hand is a variation, or rather exaggeration, of the same fault, and should be similarly treated.

OVERREACH.

Overreaching with the shoulders most always comes from an anxiety to row long, or to appear to row long ; but it causes waste of power, for the shoulders, if not braced back by the muscles behind the shoulder-blade, give still more under the strain of the stroke, so that the body is not "taut," and thus is pulling upon a spring. The farther back the shoulders are held, the more is the collar-bone arched forward, and thus it adds to the support of the shoulders, forming an arch against which the sockets press. If the shoulders are slackened forward, the arch of the collar-bone flattens and becomes almost a straight line ; and the more it does so, the less support does it give to the shoulders. Thus, the more they stretch in the reach, the

WM. SCHARFF.

From a Photograph by Bishop, Pittsburg, Pa.

EVAN MORRIS.

From a Photograph by Robinson, Pittsburg, Pa.

more they give when the strain falls upon them. The sequence of overreaching is a slack finish and feeble recovery, for the shoulders (if the stroke is to be eventually finished orthodoxly) have all the farther to work back into their proper position before the oar can be rowed home. If they are not eventually braced up by the finish, the biceps must do the work to the finish. Overreaching is best cured by practical illustrations of the required attitude out of the boat, and then a gentle paddle in a pair; the less work done in the paddle, the better will this required action be obtained.

MEETING OAR AND ROWING DEEP.

Woodgate in his treatise says: *Meeting the oar and rowing deep* at the finish (without necessarily a slant of the oar caused by a faulty hold, but a slower dive of the oar, at its proper angle) usually arise from the same fault. Often they co-exist—both engendered simultaneously—the one still further increasing the other. The cause in each case is, rowing the finish of the stroke with the arms only, the body having ceased, or nearly ceased, to work. The legs work instictively on behalf of the body, and the body depends on the legs. If the legs leave off pressing the stretcher before the hands get home, the body stops work, and is dragged forward again by the finish. Or, again, if the body ceases to swing back, and leaves the arms to finish alone, the legs generally slacken their pressure simultaneously by instinct, and the result is that the body is pulling forward by the work of the arms. Another result is that the arms, heavily taxed to row the oar home by themselves, find the oar go easier edgeways than square in the water. They either bring it out too soon, finishing in the air, or they first rise above the proper level and sink the oar, and then lower again, and bring it back to its level and out of the water. This up-and-down journey keeps time while the other men are rowing the stroke home in the ordinary way, and is less exertion to the arms than rowing the oar out square by their own unaided efforts. The remedy for both these faults, arising from one cause, is to tell the learner to keep his feet pressing up to the end of the stroke. This will make his body work; his body, working back, will

not double forward; and the arms, aided in their efforts, will, with a little care, return to their proper line of action —keeping the hands throughout in the same plane; the rowing deep will thus be cured.

SCREWING.

In "screwing," the body at the finish of the stroke is out of the line of the keel of the boat, either overhanging the water, or twisted back into the centre of the boat. Now, as a man is supposed to be built evenly at the outset, it is hard to see why he should work in a one-sided manner to his own discomfort; unless there is some external agency beyond his own direct control (so far as the swing goes) which thus perverts him. If it is really apparent that this screw comes from an endeavor on the part of an oarsman to do his work with one arm or one leg in preference to the other, the fault must then be confessed to be directly attributable to his faulty and one-sided swing; but in ninety-nine cases out of a hundred the case is just the reverse; it is that the discomfort of the man's seat is such that he cannot, in an upright attitude, utilize both sides of his frame, and he accordingly seeks an attitude in which he can, according to existing circumstances, use his body more fully. The cause in such a case will probably be a wrong level of the rowlock compared to the seat. That level may be wrong in the boat itself, or it may be made wrong during the stroke by the inequality in the trim of the sides of the boat, owing to some fault in the rowing, most probably a feather under water. But though the level of the rowlock is the commonest cause, others may exist. The one, a cramped stretcher, or rather a cramped posture for the feet against the stretcher; the feet may be badly placed by the builder; either both on one side of the keel, so much to the outside that the body cannot be seated opposite to them, and so the result is a swing into the boat at the finish; or the feet may be placed one on each side of the keel, the inside feet being thus too much inside of the body, and thus tending to make it swing out of the boat. If the boat is systematically "down" on one side, even that does not conclusively prove that the fault originally lies in the rowing only, which has made the boat

thus off its keel; it affords strong grounds for presumption, but that is all. A rowlock below its right level will cause its man great difficulty in getting out his oar, and probably tend to make him drag the boat still more down upon his oar in his efforts to get it out at the finish. A sprung oar, or one that is not square-loomed, or a thowl-pin raking the wrong way, or the sill of a rowlock sinking from stopper to thowl, may one or each be at the root of the evil, apart from the possible misadjustment of seat or stretcher.

FEATHER UNDER WATER.

The fault of *feathering under water* is one of the commonest, and to it may be traced a large proportion of other faults. Yet in itself it need not always be a primary fault. Apart from the chances of a bad oar and rowlock (the old story again), it may come from a faulty hold of the oar. If so, the remedy for that has already been treated of, and the proper way to hold an oar has been explained. But the fault is as often original as secondary; it may come from want of practice in the finish, slurring the two motions of drop and turn of the hands into one motion, so that they either come simultaneously, instead of the drop preceding, or, worse still, the turn may actually precede the drop. The motions in a general feather should be so rapid that the eye cannot detect what is wrong by simply watching the hands of the oarsman; but, as explained when treating of the way to learn a feather elsewhere, the way to detect what the hands are doing is to watch what the oar is doing. The latter tells its own tale. The remedy must be the same as the primary action of a feather. "Loafing" in light boats before the oarsmen are proficient, and especially bad pair-oar rowing, lays the seed of much feathering under water. The boat rolls at first from inequality of time and swing. To remedy this the oarsmen, instead of boldly dropping the hands, and trusting to the bodies to "sit" the boat, keep the oar close to the surface of the water to steady the boat. The drop is lost, the feather reversed, and the actions of drop and turn confused, transposed, etc. The feather under water thus engendered by want of confidence in sitting the boat destroys the steadiness of the craft, spoils the natural level of the rowlocks, and so often

breeds a screw out of the boat, as the only way of compromising the difficulty sufficiently to enable both legs and arms to do a share of work. Possibly in such a pair each man may screw to match the other instinctively. Such a sight is too common. Steadiness, therefore, is procured at the expense of a certain amount of backing water, caused by each feathering under water; and at the further expense of a waste of strength by placing the body other than opposite to both feet, from which the main support to the rest of the body must spring.

UNEVEN SWING.

Uneven swing forward is sometimes due to a "bucket," which is caused by sluggish early recovery, entailing a necessary rush later on to make up lost ground. This sluggishness in recovery may be secondary, owing to a hang of the hands, due to primary faults of feather under water, rowing deep, finishing with biceps, loosing one hand at the finish, or other faults which have already been treated of. If, however, none of these appear, or the recovery is simply spontaneously sluggish, special drill out of the boat will remedy this being late with the hands, and so will facilitate the rest of the recovery. But it sometimes happens that a man is uneven in his swing forward, without any hang of the hands. In that case the reason will be found to be that he does not use all the muscles applicable for recovery of the body at the same moment, but uses them in detail, or omits some altogether. The recovery should be from muscles of loins, abdomen and legs, the latter gaining their "purchase" from the strap. If a man sits with his legs tucked underneath him, he will still find that he has a certain power of recovery left in his loins, apart from that of the abdominal muscles. It is this power of the loins which is frequently neglected, either wholly, or for part of the swing forward. Every ounce of labor saved on recovery tells a tale in a distance when racing, for not only is there exhaustion of the whole frame generally, but loss of reach, and so opportunity for the back (which may not yet be tired out) to do its work is thrown away.

NOT ROWING STROKE HOME.

A LOOSE *button*, not pressing close to the rowlock as the oar stroke is finished, is a common fault with beginners. It is seldom, if ever, a spontaneous fault, but exists in connection with some other. Either the oarsman is screwing out of the boat, and so falls away from his oar, drawing it after him at the finish (in which case the cure for screwing, already entered into, should remedy this simultaneously), or the cause may be a slack finish, or a finish in the air, the oar not being rowed "home;" so long as the oar does good work it can hardly help forcing the button up to the thowl, but, if the pressure of work is taken off the oar towards the end of the stroke, the oar is as likely as not to leave the thowl; however, in such a case, to cure the looseness of the button, attack the slackness of the finish which occasions it.

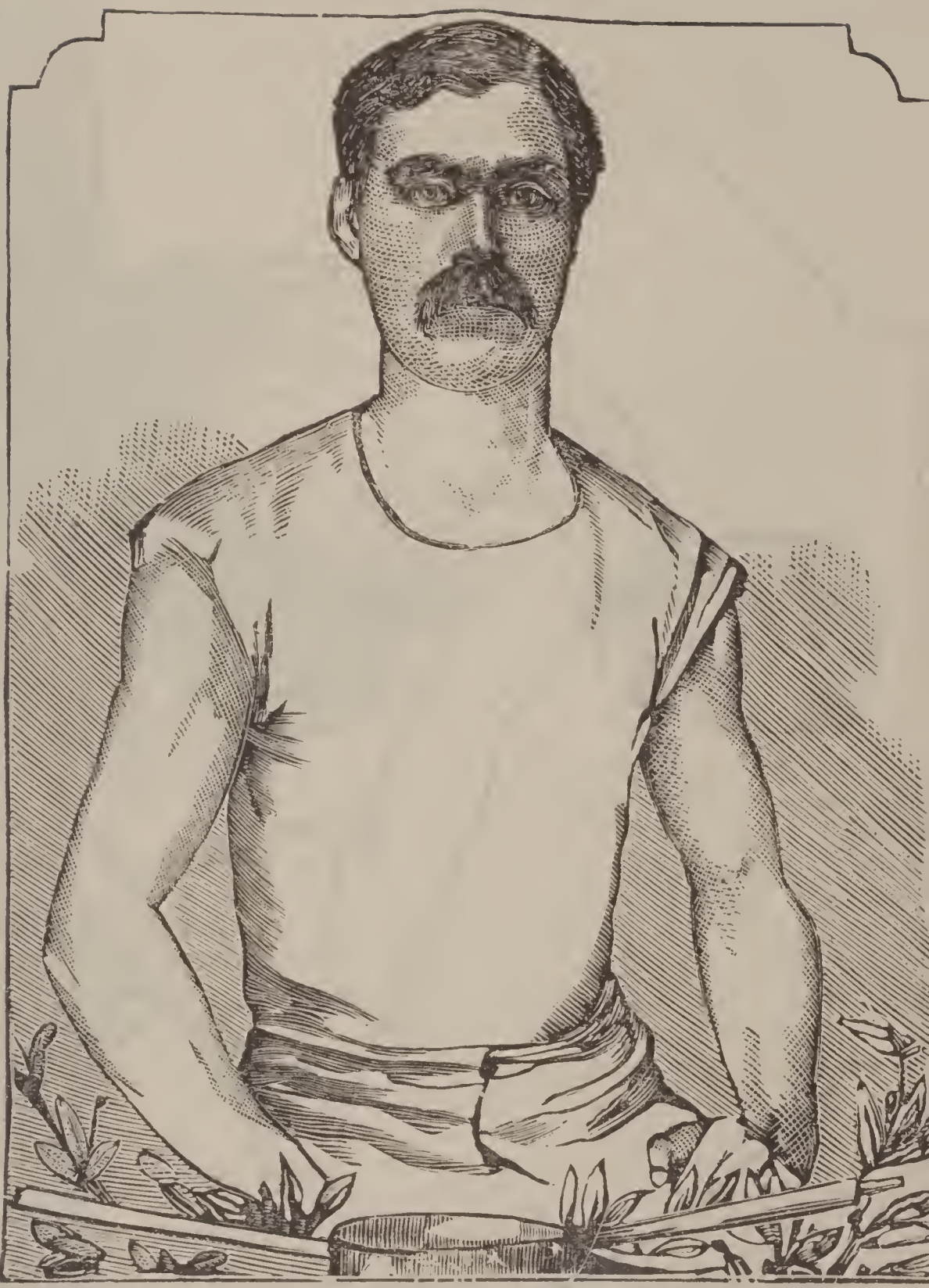
But the button may be loose at another time, and more commonly so, viz., in the recovery. This may happen because the oarsman has screwed away from his oar at the finish, as before, but it often happens, without any perceptible screw, from sheer want of "watermanship." The pupil must be told to "feel" the rowlock all the time that he is recovering, without going into the opposite extreme of lying upon his oar as he swings forward; a loose button during recovery affects the whole of a crew. The man who does so is necessarily swinging forward without any support to himself laterally, and gives helplessly with each roll of the boat. He also helps to make a lurch on his own account, for the alteration of the length of the oar in and out board, backwards and forwards, must, more or less, mar the time of the boat each time the shift takes place. The first requisite for learning watermanship is to keep the button tight against the rowlock. Many a man who is strong enough to finish with the right muscles is not capable of rowing the stroke through in time with the rest of a crew if he uses the wrong muscles. Or the cause may be an overreach in the shoulders when forward; the shoulders, in such a case, have not only to bear the strain of the first part of the stroke at a disadvantage, but have also an extra distance to go back before the stroke can be finished with the proper muscles, and thus finish is weakened. Or the stroke may be not rowed out simply because the oar is taken out of the water too soon, the drop of the hands having in such a case come before the hands have reached the chest.

CROOKED SWING.

Swinging *across the boat* is often seen without being accompanied by a direct screw. It may occur because the oarsman leans too much on his oar as he goes forward; or it may be that he does not sit square, but sits round towards his oar; or it may arise from uneven trim of the boat, not but that a good oarsman will not allow his straightness of swing to be put out by such a minor *desagrement.* Sitting crookedly is, however, the most usual cause of the fault. A man may sit crooked from the bias of his head, which he has turned over his inside shoulder, in following the back in front of him. Again, when a man is forward, the handle of his oar lies so much inside of him that it is impossible for both body and arms at that moment to lie true to the line of the keel of the boat. It is the arms that should give way, and should slant to follow the oar. They come square as the oar reaches the middle of the stroke. But in trying to make the most of the beginning of the stroke, a man sometimes unconsciously sets both his body and arms square to the handle at the first catch, with a view of gaining more power, but loses leg work, and weakens the rest of the stroke by so doing. He must be made to sit square to the stretcher at the outset, to be content to have his body, therefore, not quite square to the oar-handle at the beginning of the stroke, the arms following the oar, but not the body. This is best done by telling him for a season to set his head well over his outside shoulder, and to take time from the loom of the next oar in front of him, and not from the back in front. This will soon bring him straight. The mere weight of his head on the outside will prevent him from swinging across the boat, and so sure as he has cured his swing, he can again take the time in the proper way from the back in front of him.

FOULING THE WATER.

Fouling the water in going forward not only checks the way of the boat between the strokes, but also causes a lurch of the boat away from the oar that so fouls if the water is struck with any degree of violence. If the stretcher has not been placed too short, the fault will be either that the hands do not drop sufficiently at the finish of the stroke,



CHARLES E. COURTNEY.

From a Photograph by Ernsberger & Ray, Auburn, N. Y.

or that they are not shot out quickly enough from the chest so as to clear the knees before the latter begins to rise from the natural bend of the knees as the body swings forward. Insufficient drop of the hands, or sluggish recovery of the same from the chest, is then the cause of this fault, and the cure should be directed accordingly.

WATERMANSHIP.

A good oarsman should not only be able to keep time and swing, but should always have command over himself and his oar, and not be thrown out by a lurch of the boat or rough water. The first thing an oarsman has to do is to keep his own balance. Having succeeded in doing so, he can next learn to secure the balance of others. To do so he must always be on the look out for a coming lurch, must be quick with his hands, sit tight to his seat, and ready to anticipate. The rest he must learn for himself; practice only can make him perfect.

BENT ARMS AND WANT OF CATCH.

If a man honestly wishes to work, and yet finds his rowlock at a level, or his oar lying at an angle to the water at which he cannot get his body to do its work, he will try to do his best with his arms, which are all that remain available. Some men, in their anxiety to get sharp hold of the first catch of the water, endeavor to add to the force by bending their arms at the same time that they apply legs, loins, etc. This they would not do if they already made all the use available of the last named muscles, for the strain would then be too great for bent arms to bear; but so long as the use of these muscles is but half developed there is scope for the arms to join in the catch, and for the time being the oar comes a trifle faster through the water during the first part of the stroke. But the result is not only that the arms soon tire under the strain of coupling shoulders to legs with bent joints—and a man who so rows proves no stayer—but still more, the arms, by thus taking upon themselves part of the duty that should belong to other muscles, prevent those other muscles from ever

bringing themselves up to the regular standard; for they develop according to strain put upon them, supply following demand, and if the strain is thus eased by the arms development is no longer urged.

It is easy to hit the water by rowing the first part of the stroke in the air, and so getting an impetus on the blade, but in such a case it is not the first part, but the middle of the stroke that is caught, the first part being non-existent (in the water). To avoid this the hands should be carefully shot out at the proper level, not too low. The stroke, when once caught, must be held, drawing it well through. When it is "dropped" after being carefully caught, it is because legs and body are not actively in concert, the body has been thrown sharply on, but the legs have not backed it up by rigid resistance. The legs must be ready to feel the stretcher and to stiffen against it the instant the body feels the strain of the stroke.

Sharp motions are performed with less accuracy than slow ones. A crew that is taught to put its oars gently into the water will be able to do so with far more accuracy at first than one which sends them in with a dash.

ADVANTAGES OF SLIDING SEATS.

Sliding seats were said to have revolutionized rowing when first they gained recognition. In one sense they may be said to have been revolutionary, in that they gave such an access of power that those who used them, even if they set at defiance ordinary rules of good rowing—especially of body work—were still able to obtain more pace than those of similar physical calibre, who, though rowing in sound form and with good body work, were confining themselves to fixed seats. Most of the new votaries followed it by light of nature, and not on scientific principles; but as the use of the slide became better understood, and a few good specimens began to display themselves, it was soon seen that good sliding was as far ahead in pace of bad and primitive sliding as the worse editions of the new art were ahead of the old fixed-seat style. Bad sliding will, as a rule, defeat good rowing on a fixed seat (assuming physique to be equal in each case), but that is no reason why sliding should not be so cultivated as to possess all the excellences of the best fixed-seat rowing, and yet to

have in addition the extra action and power which is essentially characteristic of the "slide." Even bad crews adopting sliding seats at short notice, and with but an embryo knowledge of how to use them, gained at once such a palpable accession of speed that it was plain that if sliding with bad rowing could do thus much, sliding combined with good rowing could effect still more. Sliding on the seat had been practiced for some years before the sliding seat came in. The strain of drawing the body up and down with the legs was not too great at the slower stroke which scullers use; but at the quicker stroke which is applied in rowing, quicker on the average by six to even ten strokes per minute, the strain upon the legs was too great to allow of its being sustained for any length of time. Renforth's Champion Four used to slide on fixed seats for a spurt, but not for any prolonged distance. Somehow it never seemed to strike English oarsmen that, though the bugbear of sliding was confessedly friction upon the seat, the whole machine might be simplified by making the seat slide with the body, instead of the body slide upon the seat. To the late Walter Brown this adaptation of the principle is theoretically due. He had wits to see that if the body was to slide upon the seat, it was simpler that it should do so upon a false seat, itself sliding upon the real seat below. An English crew on their return from America speedily put into execution a sliding seat, and its value was practically proved in the great four-oared race that took place on the Tyne in November, 1871. James Taylor, who had meantime perfected the wrinkle which he had recently picked up in the New World, in the crew composed of James Taylor, Thomas Winship, Joseph Sadler and Robert Bagnall, persuaded his crew to adopt his plan. This use of the novelty was kept carefully dark to the last hour from their opponents, and the race, when it came off, was most hollow, owing chiefly to the use of the sliding seat. Chambers' crew was nowhere. A couple of sculling races on the Thames in the following Spring more fully proved the utility of the sliding seat. It added power and speed without in any way detracting from powers of endurance, as had been formerly the case where sliding was practiced on fixed seats. Not that those who slid (sculling) on fixed seats had been the worse or slower in the long run for so doing. Those who attempted it in rowing, to a greater extent than for mere spurts, had been the losers in the long run by it, for the reasons above explained. But

the removal of the bugbear of friction at once established conclusively the value of the novelty, and from that hour it gained rapid recognition among rowing men. Before the season of 1872 came to an end hardly a race was rowed by oarsmen of any pretensions except on the new principle.

The simplest method of appreciating what is the action on a sliding seat is to recall for an instant the action of body and legs upon a fixed seat. On the latter the body does the main work of the stroke, but is supported and kept in the position necessary for this work by a rigid resistance of the legs against the stretcher. The length of that stretcher on a fixed seat is, or should be, the shortest at which the pupil can clear his knees with his hands in the recovery. Upon a fixed seat mechanical and physical power are to some extent in antagonism. The body would have more physical power the shorter the stretcher was placed, but if shortened beyond a certain point it causes the knees to be so bent that the hands can only clear them by raising the rowlock to a higher level, and so forfeiting a certain amount of mechanical power. Hence a compromise between mechanics and physique is effected, and the stretcher is placed only so short, and the knees are only so bent, as not to sacrifice mechanical power by placing the rowlock too high.

On a fixed seat the body swings upon a fixed pivot. On a sliding seat the pivot itself moves fore and aft, while the body swings upon it, and the arc described by the body is correspondingly enlarged. The arc described on a fixed seat is circular, similar to that which the spoke of a wheel revolving, but not progressing, would describe. The legs on sliding seats may be said to exercise the same average support to the body as they do on a fixed seat, and the body, meantime describing a larger arc, does a corresponding extra amount of work. Although the reach of stroke that a slide on the seat alone—devoid of motion of body—would attain would be, from its very shortness, less effective in propelling a boat than a less powerful but longer stroke rowed by the body without a slide, yet when this slide comes to be coupled with a very small amount of swing, such an amount as would not be dignified with the name of rowing on a fixed seat, the two combined produce more propelling power than can be obtained from the mere body stroke on the fixed seat.

The theory of sliding should be simply this: 1. That the body does its own work, as heretofore on a fixed seat.

2. That the legs back up the body as before, but, instead of a mere rigid resistance as formerly, simply propping the pivot of action in its place while the body hinged upon it, the legs now do still more. Let a man throw his body on to the oar as before, when on a fixed seat; the instant he does this his legs instinctively come into play to support the body. Then, while he insists upon carrying out his original swing, let him gradually extend his legs, and shift the pivot of action backwards as he swings upon it, taking care that the pivot is never moved too fast to admit of the body doing its full and usual swing. In fact, the latter may be carried much farther back—indeed should be so—than would admit of good recovery on a fixed seat; for the facilities for recovery which a sliding seat gives enable a man to go much farther back than on a fixed seat, and yet to gain rather than lose power by so doing.

But *on sliding seats the best form of recovery* is not quite a converse of the action of the stroke. The hands follow the same rule as on a fixed seat, viz., a quick shoot out, and the rest of the recovery performed with rigid arms; but, with regard to the relations between slide and swing, these do not repeat conversely the action of the stroke. In the latter the crucial point was that slide should not run away from swing, but in recovery it may with advantage do so. The body should not wait for the slide to complete its task, and then follow, but for all that it may allow the slide to hurry in advance of it, following meantime at a reasonable pace, and completing the swing after the slide forward has been completed.

The recovery of the slide itself should be performed by contracting all the flexor muscles of the legs and feet simultaneously—the ankle and knee should work together. The mere bending of the knee, so long as the foot is kept flat to the stretcher, will suffice to bend the ankle-joint, even if the muscles that work the latter are passive, but the ankle should be active, and not merely passive, and should take its own share in the work of the slide.

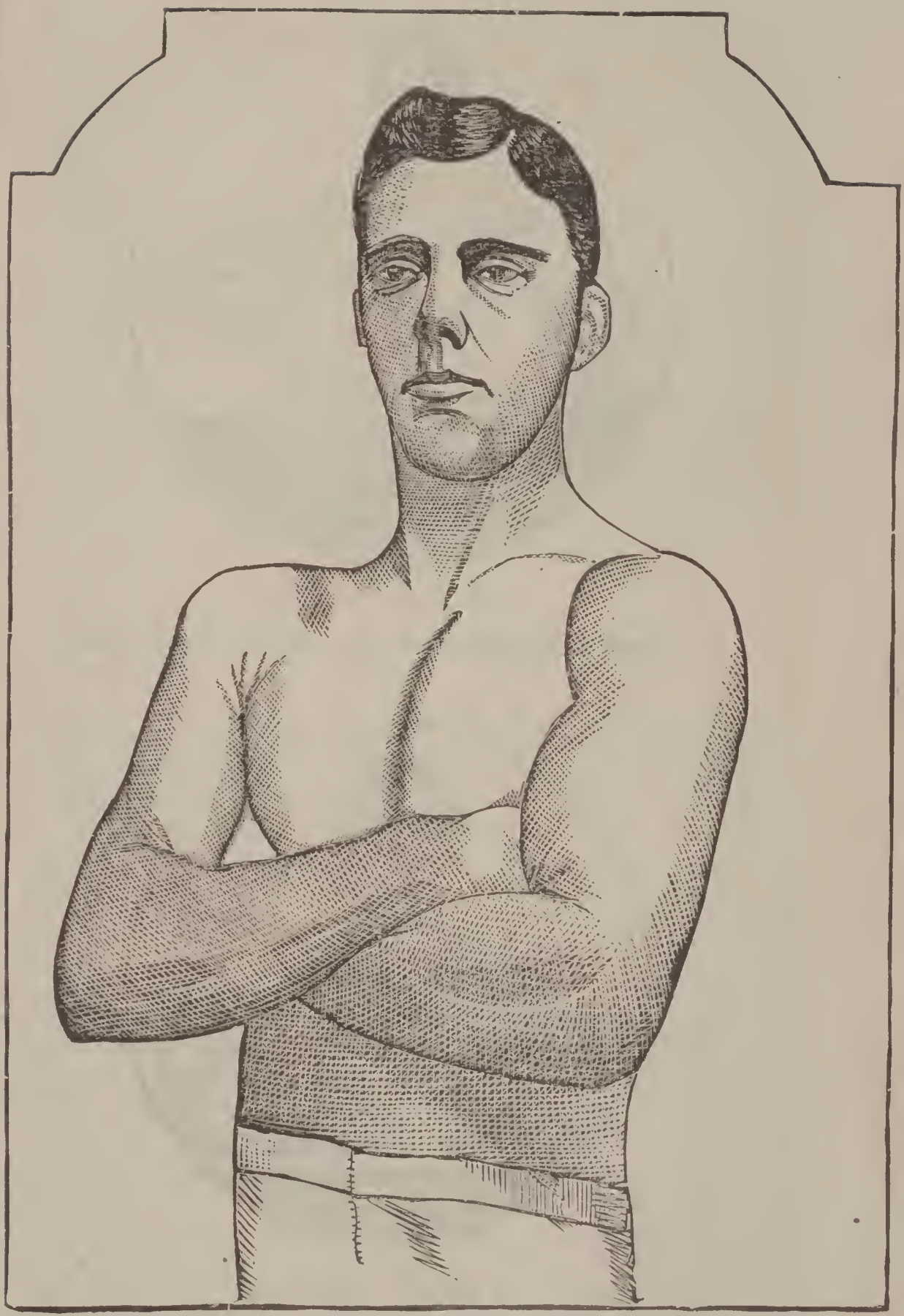
The *length of the stretcher* should be as short as can be used while allowing the hands to clear the knees as they pass each other during the stroke. The hands, by being shot out quickly on the recovery, get in front of the knees before the latter have come to an acute bend, and at the moment that the water is caught at the commencement of the stroke the knees should be actually higher than the hands by some three inches. *The legs should never be*

straight at the end of the stroke; there should always be some bend left at the knees, not only to afford proper support to the body at the end of the swing, but also to facilitate the recovery; for when the knees are straight the mechanical power of the flexor muscles is at a "dead point," and the extra exertion of getting the legs under way is not compensated for by any work gained by the extra length of slide to the point when the legs are thus straightened. Whereas, if the legs are slightly bent at the commencement of the recovery the muscles work to greater advantage, and the flexion is completed with greater ease.

The ordinary oar-handle will, with the extra reach obtained by sliding, be found to lie too far inside the body at full reach forward and backward by some two inches. If the oar is thus too short, the oarsman cannot swing well back, and yet keep his inside hand both on the oar and yet flat to his ribs and doing its proper work. The oars, therefore, must be lengthened inboard to allow for the extra reach, and with that addition a certain proportionate length outboard must be added, else the oar will come too easily through the water. Though a nine-inch slide can be properly used in good practice, it by no means follows that a trainer should feel himself bound to try to work a raw crew up to the use of this length for their first race of this sort. All depends upon the time available, and the proficiency of his pupils. It is better to make sure of mastering a certain amount of slide than to risk spoiling all by attempting too much. More pace will be gained by a six-inch slide, combined with good swing of body, than by a nine-inch with swing abandoned; and the former will not sow seeds of future bad rowing, as will the latter.

The above theories and explanations are the opinions of W. B. Woodgate, who in England is looked upon as an authority concerning these matters. Some of our American scullers believe that more speed can be got from a four-inch slide than from a six or nine-inch slide.

In reference to this latest improvement in connection with the art of rowing, Dr. G. M. Humphrey, of Cambridge University, Eng., writes as follows: "The stroke is lengthened by the straightening of the knees, and this is effected by the 'increased action' of the muscles, which, in the ordinary mode of rowing, are not used in proportion to other muscles; that is to say, the stroke is lengthened, the pulling force increased, and the muscular action more equal-



FRED A. PLAISTED.

From a Photograph by Richardson, Brooklyn, N. Y.

ELLIS WARD.

From a Photograph by O'Neil, New York.

JOHN BIGLIN.

From a Photograph by Notman, Montreal, P. Q.

ized in different parts of the body. This advantage may be, to some extent, counterbalanced by the lessened fixity of the *point d'appuc* of the trunk muscles consequent on the increased movement in the joints of the lower limbs. To what extent this would operate it is difficult to tell. Indeed, the question arising out of joint and muscular action involves so many complex problems that it is no easy matter to determine them satisfactorily."

Dr. Curnow, of King's College, London, Eng., also bears the following testimony to the advantages, physically speaking, which this style of seat possesses over its predecessors: "The reason why the sliding seat does not fatigue the body so much as the stationary seat is, I think, easily explained by the strain being more completely thrown on entirely different groups of muscles, which contract during the stroke, and relax in the reach forward, and *vice versa*. By this easy alteration of the leg-muscles the chances of cramp are reduced to a minimum."

THE ART OF SCULLING.

If a man has a fair idea of rowing, but has never handled sculls in any shape, we would advise him to commence thus:—1. To keep clear of a sculling-boat for the first day or two. 2. To hold in equally pious horror "hack" boats of any description, especially "whiffs." A good outrigged gig should be used to commence operations. A "dingey" he should fight shy of; she is so short that when pressed she will hold no "way," will turn too easily, and from the fact that she goes no faster for a long stroke, may teach him to row short from the outset. Let him see that the thowls of his gig are "proud" (raking forward), and devoid of grooves in the upper portions of the thowl, worn by the upper angle only of the loom of the scull pressing the thowl in a feather under water, which is too common among scullers. Let him next see that his stopper is far enough off from the thowl to prevent his sculls from "locking" in the rowlock when forward. Few gig rowlocks are wide enough between thowl and stopper for even full reach in rowing, without some filing away of the stopper, and a wider rowlock is needed for sculling than for rowing, from the sharper angle which the scull, compared to the oar, makes with the rowlock (when the body is forward), from

the fact of its being shorter inboard. If he confines his reach in his first essay to that suffered by narrow rowlocks, he will, when he comes to reach out more fully in the wider rowlocks of a sculling-boat, find his hands not "together" in the increased reach, but one getting into the water before the other. The best way to hold his sculls, so as to avoid cramp of wrist, and to prevent his hand shifting away from the end of the scull when greasy from perspiration (thus losing leverage), is to let the upper joint of the thumb "cap" the end of the handles. Let him put his stretcher as short as he can possibly bear it, and of course commence with a fixed seat, even if he has been ever so proficient in rowing upon a slide. He will have enough to do in thinking how to get his hands in and out of the water together, when commencing sculling, to have any spare attention to bestow upon sliding, and if he practices the latter without thought he may breed faults for which he will be sorry hereafter. Let him choose a pair of sculls that lie true in the rowlocks, and, if possible, let him get a proficient to test the true bearing of the sculls for him before he uses them, that he may know whether unevenness in their action be the result of misfortune or of fault. The amount that they should overlap at the hands is to some extent entirely a matter for his own taste, but if he has no taste in the matter he will find five inches a safe medium. Let him spend his first two or three days, if not more, in long, steady practice in his gig. The same principles that he learnt in rowing—of straight arms when the water is first caught, use of back, loins and legs—he must still put in force. But he should keep his arms straight for a longer distance of swing, and may go much farther back before he begins to bend his arms and to bring them into his body than when rowing. As his arms begin to near the body he may bring himself up by them, pull himself up to his sculls at the finish, a thing which with his oar he should not do. A sculler should endeavor to do as much work as he can with stiff arms, his body and loins doing the main duty; he may go back almost to his full available distance before he bends his arms at all; if he were then to continue to go back still farther, all the time that his arms were coming in to the body, he would go back too far for his powers of recovery. If he were to stop his body for his arms to overtake it, he would be during that time making no use of his body, and wasting time with it; but by commencing recovery with the body before

the arms have come home he economizes his body, wastes no time, eases his recovery, and prevents his boat's head from burying. So much for the action of body and arms; his hands must require special attention. He must try to time them to the tenth of a second, that the sculls shall fall into the water simultaneously, and shall leave the water, with wrists simultaneously turned, at the same instant. If he does not acquire this knack in the gig to some extent he will find himself all abroad in a wager-boat. So soon as he has some confidence in the even action of his hands (which long and painstaking rows will best attain) he can go into a wager-boat. When first he so promotes himself he must call all his oarsmanship into play. He must "sit" the boat for himself; no one else will do it for him. He must not trust to his sculls to steady the boat on the recovery, nor let them slobber along the surface of the water to preserve balance. He must drop his hands and lift the sculls boldly out when the stroke is finished. Roll at first he will, but for this he must make up his mind, and must try to counteract it by balance of his body, and by sitting tight, not by sliding his sculls along the surface of the water to steady himself. If he does this last he may counteract unsteadiness, but will never acquire the art of balance, nor cure the faults that caused him to roll—will rather add to them by feathering under water, and will lose inches and inches of shoot at each stroke by thus fouling the water. Half the crab-like contortions that junior, and even senior, scullers display (one arm bent over the other, one shoulder shrugged, one arm longer in the reach than the other, or one rowed home, and the other finishing inches away from the chest) may be traced to uneven sculls or work which prevent the body from throwing equal weight upon each arm. It is true that many scullers spring at once to a wager-boat without an apprenticeship in a steady gig, but they do not become proficient any sooner for so doing, and many a sculler in a wager-boat who cannot get his hands in time, and spoils his style and steadiness in consequence, would obviate half his difficulties if he would condescend to do two or three long rows in a well laid-out gig, paying special attention to the uniformity of his hands.

Steering is an all-important accomplishment for a sculler, not only to save distance, but also to avoid risk of fouling when he comes to racing. If the course is pretty clear the sculler will soon learn not to trust to looking round more

than to get his boat's head straight for the reach of water in which he is, and then he will keep his eyes on the stern of his boat, and regulate that by some distant object ashore, as an artilleryman lays a gun, so as to keep the straight line in which he has laid his boat. It stands to reason that he shortens the reach of the arm on which side he turns his head to look behind him, and loses his power. As he gets to know a particular course well, he will fall back each time upon the same steerage points for guidance, and only those who have sculled to utter distress can appreciate the gain of being able to take up, almost by force of habit, and without any exertion of calculation in the mind, each necessary steerage point in turn over a well-known course. As he watches his boat's stern the sculler will be able to judge of the evenness of the action of his hands. He can see whether they work evenly throughout the stroke, or whether one rows the other round in the first part, and has to slacken to allow the other to bring the boat straight in the finish of the stroke. If this is done, he will see that not only does he lose ground by the boat's wake being thus an elongated Z at each stroke, but also he loses power by one hand working weaker than the other at one time, and the other at another. If he can bring the hand that is weakest in the first part of the stroke up to the level of the other, he will gain not only in this, but will also no longer have to waste strength with the other hand at the finish. In his steering he must be on the watch to correct the first beginning of deviation from his course, and to adjust the work of each hand accordingly. In time he will learn to keep his stern-post true to his steerage object, without having constantly to awake to the consciousness that he is many degrees out of his due line, and so having not only to waste strength in rectifying it, but also to lose ground in returning to his lost track. Steerage apparatus now takes much of the labor off the arms of righting the boat in its course; but a beginner will learn best to work evenly with both hands if at first he dispenses with such apparatus. The power of rectifying unevenness by a touch of the foot upon the steerage lever tempts many a man to be careless of studying even work of both hands, which would obviate constant appliance of the rudder. Besides, the best fitted rudder must more or less "draw" the water, and so check "way;" and so on smooth water a sculler who can use his hands evenly, and can steer a good course without it, nor has

many tortuous corners to navigate, will go faster without a rudder than with one.

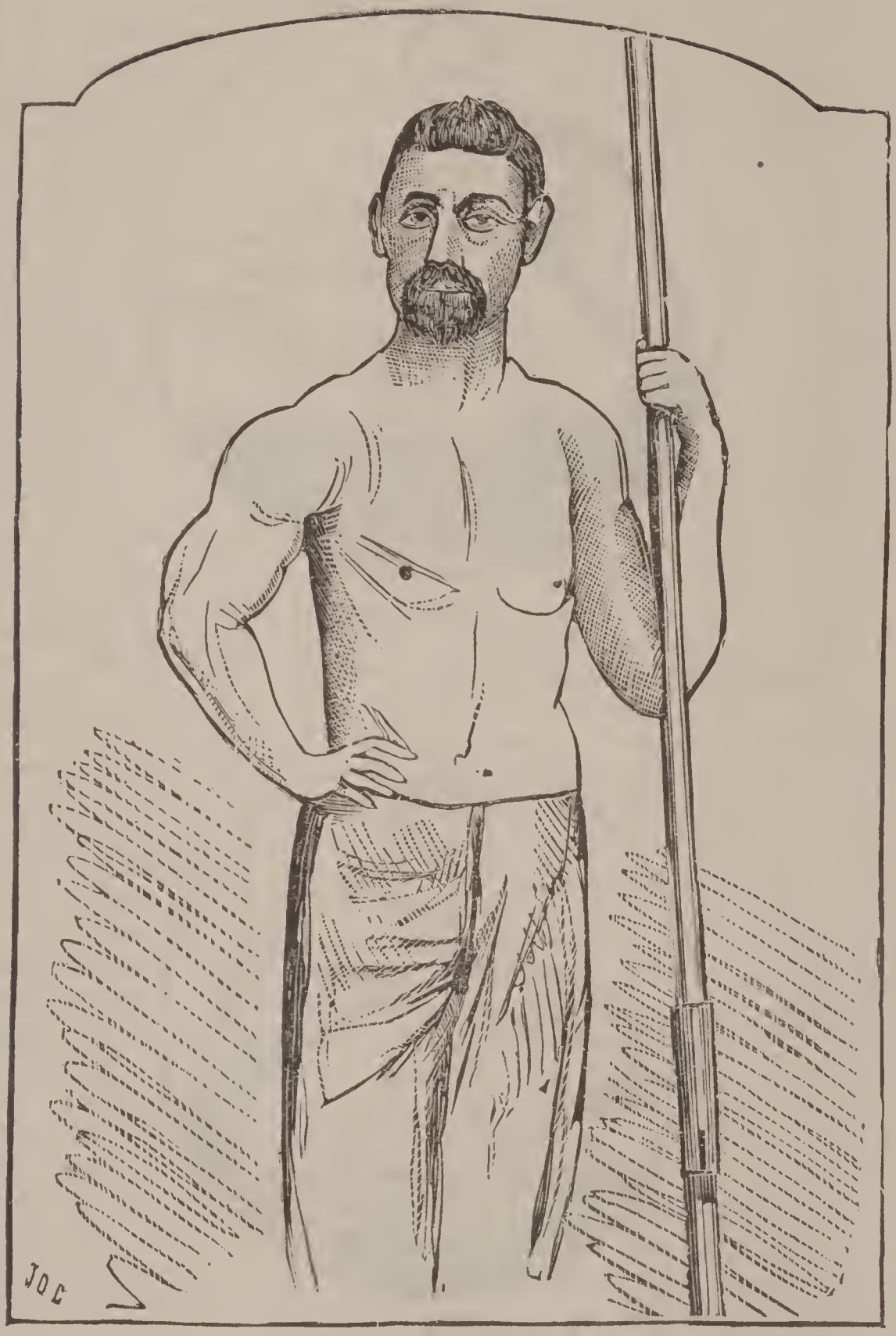
Length of stroke tells in any craft, but more in a sculling than a rowing boat. The longer the stroke the less frequent repetition it requires, and, therefore, the slower can be the swing forward. This latter not only tells upon the *physique* of the sculler, by sparing the strain of recovery, but it also tells upon the travel of the boat, for a quick rush forward ducks the stern under water, and causes the boat to lose way, not only from being out of the plane of the water, but also from the weight of water lying for the instant upon her canvas, which increases the "surface resistance" (or the extent of superficies of the hull, which is brought into contact with the water, and so into friction with and attraction to the particles of water).

It is possible to scull a much longer stroke than can be rowed. The reach forward of the body has the same approximate limits in each case. If anything, a sculler can reach his hands an inch or two farther forward than the oarsman, for the latter just at the end of his reach has his handle a little inside of him, his arms sloping across him, and not square to his body. The sculler is not thus cramped; his arms shoot out square to his body on each side. But it is in the swing back that the sculler gains mostly in reach. If the oarsman goes too far back before bending his arms, the end of his oar-handle lies inside his body, and his power of finish, especially with the inside arm, is hampered, for the forearm can then no longer be parallel to the body. If his oar were made long enough inboard to enable him to go as far back as a sculler, it would cause his arms to be lying outside his body when the oar was at right angles to the gunwale, the period of the stroke when the mechanical power is greatest. A sculler, on the other hand, is always able to throw his weight in a direct line; his hands, though nearer or farther from each other at various periods of the stroke, always bear a strain corresponding in direction in the case of each, *i.e.*, the joint direction of the two powers, right and left, according to a "parallelogram of forces," would be in a line with the keel of the boat. Thus, however far the sculler goes back, his hands jointly never pull out of the line of the keel. So that it comes to this: the stroke of the oarsman is limited in length, because, beyond a certain angle of the oar with the gunwale, the body and arms cannot do their work in the plane of the keel nor in the same plane with each

other. The stroke of the sculler is unfettered in this respect, and is limited eventually only by mechanical requirements (the limit of the angle which the scull can make with the thowl, without locking) and by the demands of recovery. This latter, even on a fixed seat, is easier work than in rowing, for the body when far back can pull up to the sculls. In rowing, as said above, this pulling up is not practiced, because (1) with a medium swing back it is not wanted, and the body should continue to go back till the hands overtake it; (2) with a swing back as far as sculling admits of, an oarsman would be unable to recover himself squarely by his oar-handle, for it would be inside his body, and out of the true plane. If, therefore, recovery is a matter of greater ease in sculling than in rowing (compared to the length of reach), even on a fixed seat, it is obvious that on a sliding seat there should be less difficulty in the return swing. The fact that the arms of the sculler are always jointly working in a line with the keel, and thus he is enabled to take a longer swing than in rowing, explains why, as a matter of practice, double-sculling is faster than pair-oar rowing.

Since, therefore, the body should swing farther back in sculling than in rowing, and slide should always be extensive with swing, it is obvious that the legs must extend themselves more slowly in sculling than in rowing, else the body will have no leg-work left to drive it back the latter portion of the swing. As in rowing, the slide should never be so long (or the stretcher too far from the seat) as to allow the legs to be straight at the end of the slide. If they are allowed to straighten, not only is the latter portion of the swing weakened, but the powers of recovery are also hampered, for the muscles of the legs, when straight, being "at a dead point," start at a disadvantage.

The sculler should be careful not to let the finish of the stroke with the arms be anything like a jerk. As said above, the body should be just commencing to recover during the last part of the bend of the arms. If the body waits for the arms, and the latter come into the chest with a "swish," the only result is that the boat's head is buried, and "way" lost. On a sliding seat the sculls, like oars, should be a trifle longer inboard, and, of course, in proportion outboard. This is to prevent the hands being too far apart at the extreme reach forwards and backwards. Sculls for a sliding seat may be as much as six or six-and-a-half inches overhand, if the sculler

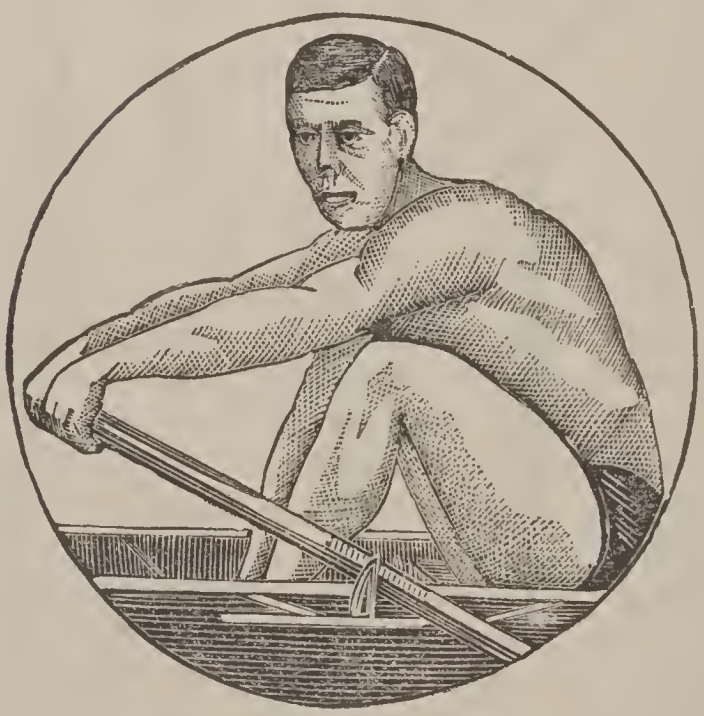


WILLIAM H. DECKER.

From a Photograph taken in Staten Island, N. Y.

WALLACE ROSS.

From a Photograph by CLIMO, St. John, N. B.



WARREN SMITH.

From a Photograph by NOTMAN, Halifax, N. S.

makes sure of going back till his hands clear the ribs at the finish on each side of his body. If he does not go so far back as this, then he will do better with less overhand sculls, but with the first-named work and action of body he will command most pace. A sculler may take this as a rule, that his arms should remain straight and his body be going back till after his sculls have "opened" in the swing back, *i.e.*, till they are no longer overhand. This he can only secure by keeping a judicious reserve of slide and leg-work up to the last.

Since the shorter the stretcher is, the more power will be attained, it is necessary that the hands should clear the knees on the recovery as soon as possible, else even in smooth water they will not get by afterwards. When once the hands have got in front of the knees the slide forward should, as in the recovery of rowing, be completed rapidly, in advance of the body, thus giving an impetus to the body forward, and easing the strain of the abdominal muscles in swinging the body forward the last part of the reach. The arms should shoot to full stretch as quickly as they can after the hands have cleared the knees. This throws the shoulders back, aids respiration, and is also the most advantageous position for the arms to carry the weight of the sculls forward. No pair of sculls is ever the worse for an ounce or two of lead let into the butts of the handles. Any sculler who tries this will be surprised to find how it eases the weight of the sculls outboard, without adding any perceptible burden to the cargo of the boat. When forward the hands will be much lower than the knees. In the swing back, the hands should, with work and stretcher properly laid out, pass over the knees just at the instant when the knees have lowered themselves sufficiently to admit of the passage. It stands to reason that they cannot pass sooner, and if they pass later, it shows that the slide has been too rapid in proportion to the swing.

No sculler is a proficient till he is at home in rough water and work. To manœuvre the former he must be able to drop his hands well when required, and to drop them evenly and simultaneously, else his trim is spoilt. A good sculler can go through rougher water than oars can, for the drop of the hands elevates the blade of a scull more than that of an oar. If water is very rough, a sculler must judge for himself whether he must not drop his hands and get them in advance of his knees before he commences to bend the

latter at all. His recovery is slower for so doing, but it is surer and freer from concussion with waves.

In starting on a strong tide, with the boat's stern held, the sculls must be flat to the water till the word is given, else the rush of water against the blades will strain the boat, and perhaps pull the sculler off his seat. Even with sculls thus flat to the last, it is difficult to turn both so simultaneously that each should catch an equal amount of water the first stroke. If they do not, not only is the boat's course marred at the outset, but the form of the sculler is hampered for the next few strokes, and there is an off chance for an upset even for a good sculler. It is safer, and does not lose many feet of start on the first stroke, not to be full forward at first, to go forward a few inches more after the word to start is given, and then to commence, with evenness of sculls insured. In comparatively still water this caution is unnecessary.

A sculler should get away briskly, but it is bad policy to push for a lead at the price of forcing the pace beyond the sculler's best average speed. To a good sculler (of good pluck) who can sit his boat, the wash of an opponent does but little comparative harm, far less than would a burst at starting at a pace which he could not maintain. A sculler will always improve himself by practising sculling in the wash of another.

Since a sculler should endeavor in a race to select his best pace for the whole course, and not to be troubled at a lead, it is necessary for him to know almost instinctively what his best pace is. This he will learn if he times himself day after day at various points over his course, and notes whether, as he increases his stroke, his times from point to point bear the same relative proportions to the time of the entire course. He can thus judge whether extra speed at the outset sacrifices staying power farther on. He must only judge *proportionately* of his distances and times, for wind and stream may make the time of the whole course vary from day to day.

In sculling on a tide, against a head wind and rough water, it should be borne in mind that a sculling-boat, being by its light weight easily influenced by wind, and holding less way and momentum than a larger boat, suffers more by opposition of wind and waves in mid-tide than it loses by loss of stream at the more sheltered sides of the river, where stream is weaker.

FOURS WITHOUT COXSWAINS.

Fours without coxswains is, when properly manned and found, more conducive to good rowing than any other class of light boat. So long as coxswains were carried, a four-oar was the hardest craft to "sit" well of any. Though some inaccuracy in the rowing will be (supposing the coxswain sits still) the first cause of a roll in a boat, yet, once set in motion, that rolling is enhanced to a great extent by the helplessness of the coxswain. The oarsman can right himself and regain his balance from his oar, which serves him much as a balancing-pole does a rope-dancer. But the coxswain has no such support; he falls helplessly from side to side with each lurch, and without being to blame for the original mischief, makes bad to worse by his helplessness. But with the absence of a coxswain this feature disappears. Unevenness may still exist in the rowing, but the roll thus commenced has no longer the same cause to exaggerate it, and to continue it after the primary mischief has come to an end. The four that carries no coxswain rights itself instantaneously after a lurch, and in less than half the time that a man takes to recover from a stroke, or to row one through, such a boat may roll and right itself again. The oarsmen who can "sit" the boat against a roll have also an easier task, for they have only themselves and the boat to balance, and have not an extra loose and helpless body that requires balancing of itself. Under these circumstances the form of the men rowing should be superior, especially in a raw crew, than when hampered with a coxswain. Besides this gain in steadiness, there should also be a gain in length of reach; or at least that tendency to get short, which is often painfully evident in a second-class tired four, carrying a heavy coxswain of 112 lbs. and upwards, should be obviated with the removal of the coxswain. Thus all-round rowing should improve in a coxswainless four. If he is a good steersman he needs but seldom to look round, so far as the course itself is concerned, apart from obstructions.

STEERING APPARATUS.

In steering a coxswainless four, the main difficulty consists not so much in the knowing how to steer, but in the choice of a suitable apparatus. Considering that scullers and pairs of the old fashion, with no steering appendage, used often to steer a course as good as that of eights or fours who had the advantage of a coxswain *vis-a-vis* to his destination, there should be no reason why a four should not, with the aid of a rudder, be steered as truly as pairs or sculling-boats. That such has not been the case as a rule must be ascribed to the apparatus used.

Two apparatuses have been tried. One consisted of bars projecting from the stretcher, at right angles to it, on either side of one of the steerer's feet. By pressing laterally against either of these he worked his rudder. Another, brought out by J. H. Clasper, consisted of the same principle, but, instead of the foot lying loosely between the two bars, it was fitted into a shoe, which was attached to the stretcher, and which, when moving laterally either way, worked the rudder. Anybody may steer in a four except stroke. The best waterman, if not short-sighted, ought to have the task; but as it is almost as easy from three or two as from bow seat, it is not worth while shifting a man forward in the boat out of his best place simply because he has to steer. In commencing pair oar practice, the great thing is not to row "jealous" of each other. The lighter the paddling the better—no attempt of the one to row the other round. The study should be to get the action homogeneous—the return of the arms and drop of wrists simultaneous—ear guiding as much as eye. The apparatus above recomended for four-oar steering will in a pair still more surpass the other apparatuses alluded to, for the strength and evenness of action economised thereby must tell its tale still more when numbers are reduced. A well-fitted, thin metal rudder would not cause so much proportionate drag to a pair as to a sculler, and so would be almost a ways a gain. Only with a most even pair, on a dead, straight course, and with not a breath of wind, would the absence of rudder be a gain, and then but a small one. At the same time it cannot be denied that the application of rudders to pairs and scullers, though, like Columbus's egg, simple enough, once mooted, will go far to destroy that perfection of watermanship which formerly was found in first-class pair-oar rowing. If a man can

steer with a rudder one partner well, he needs no practice, in steering at least, for a new partner. The *strongest* man of two equally good watermen should steer. It matters not whether he rows stroke or bow. The old idea that bow *ex officio* should steer is a farce. If anything, stroke has more advantage for accuracy, for he can see the whole line of the canvas, so as to lay it on the steerage point. The weaker man being then the bow, the steerer has simply to row his hardest, and the stronger in the straight reaches adjusts the line of the boat from stroke to stroke, or even half-stroke to half-stroke, with his eyes ever on the stern-post. When there comes a corner too heavy for the stronger to row round without a slacken from his fellow, he must give his orders, and the one under order should remember that a single stroke rowed with strength contrary to that desired by the steering man may lose lengths by throwing him out of all calculation, especially in rounding a curve. There is nothing like partners who thoroughly understand each other, never row excitedly, but always are on the alert each to perform his own share and to trust his partner to do his.

W. B. Woodgate's ideas of the proper dimensions so as to produce the best work are as follows:

Dimensions of Work.

Schedule A.—*Fixed Seats for Eight or Four.*

Oars.—

	ft.	in.
Length inboard	3	6
Length outboard	9	0
Total	12	6

Width of blade at top, $5\frac{1}{4}$ inches.

Rowlock.—Height above seat, 8 inches.

Distance of thowl from front edge of seat, 13 inches.

N. B.—The distance is not measured as direct linear measures—slanting from one to the other—but from the perpendicular plane of the thowl to the perpendicular plane of the edge of the seat.

Stretcher.—Length from top of stretcher to front edge of seat, 2 ft. 4in., for a six-foot man of ordinary make and shape.

For each inch less or more stature add or subtract seven-eighteenths of an inch from the stretcher (rather more than one third).

As an average measurement, it may be taken that the length of a man's stretcher, from top of stretcher to seat, on a fixed seat, should be about seven-eighteenths of his entire hight.

Slope of Stretcher should be about $5\frac{1}{2}$ inches, *i. e.*, the heels should be $5\frac{1}{2}$ inches nearer to the perpendicular plane of the front of the seat than the top of the stretcher is to the same.

SCHEDULE B.—*For sliding seats.*

Oar.—Length inboard, 3 ft. $7\frac{1}{2}$ in. to 3 ft. 8 in., according to length of slide.

Length outboard, 9 ft. $1\frac{1}{2}$ in.

Width of blade at top, 6 in.

Rowlock.—Height above plane of seat, $7\frac{1}{2}$ to $7\frac{3}{4}$ in.

Distance from slide when full forward, 9 to $9\frac{1}{2}$ in.

Stretcher.—Length from front of slide full forward, to top of stretcher, 24 in. for a six-foot man.

Slope of Stretcher, 6 in.

The length of a sliding seat stretcher should be one-third of the entire height of the man.

For a pair-oar, the height of rowlock and length of stretcher should be the same. The length of oar should be less.

(Assuming that the beam of the boat, and length of iron of outriggers, are proportionately less than in an eight) the length of oar should be: inboard, 3 ft. $5\frac{1}{2}$ in.; outboard, 8 ft. 10 in.; width of blade, $5\frac{1}{2}$ in.

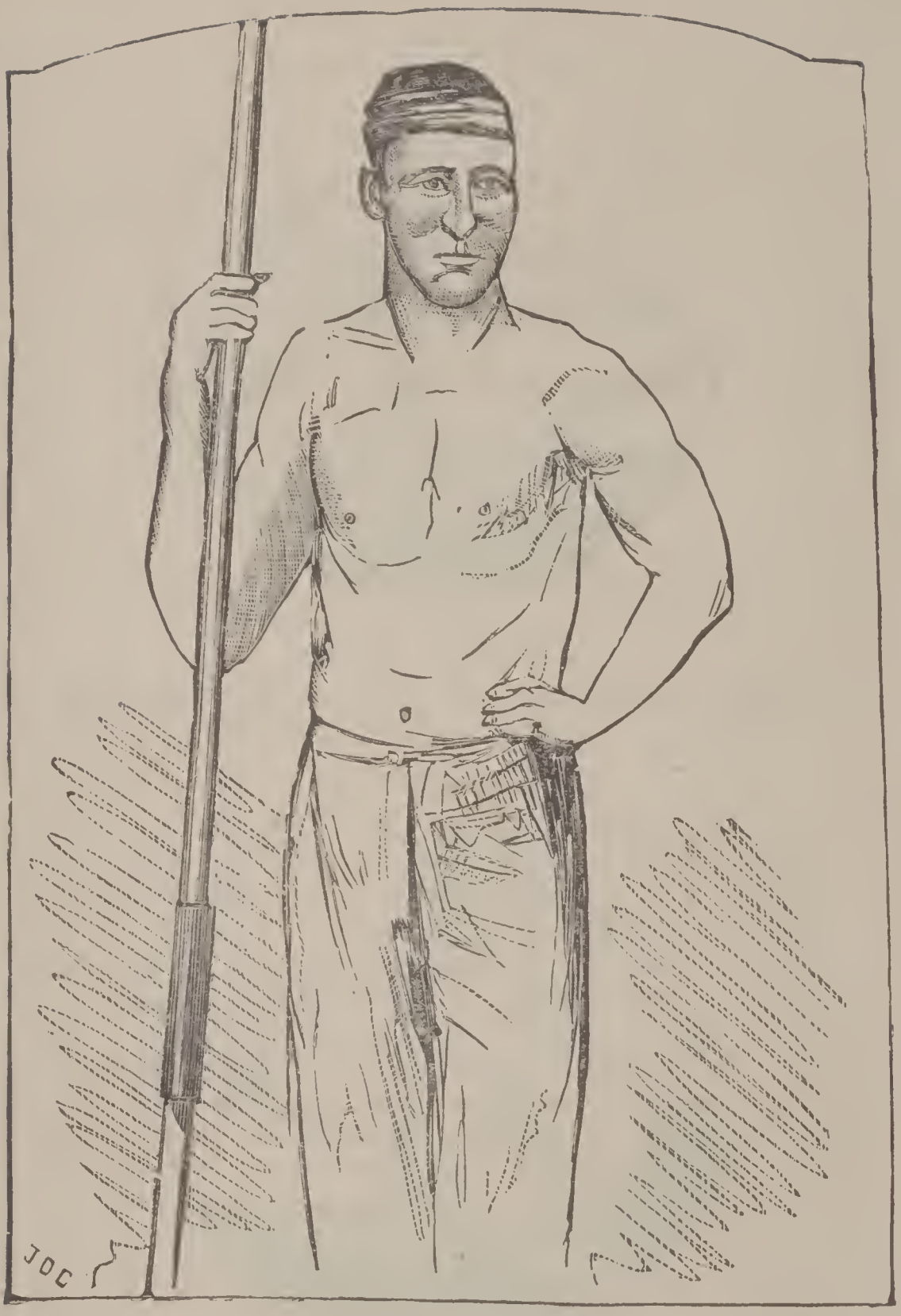
The oar must, however, be to a great extent accommodated to the build of the pair.

For a sculling-boat: width between outriggers, 5 ft.

Length of scull inboard, 2 ft. 9 in.; outboard, 7 ft. 5 in.

Width of blade, 5 in. for a 154 lbs. sculler.

The other dimensions for sliding-seats, and height of rowlock, length of stretcher, and distance from work, should be the same as for a sculling-boat. A sculler of long reach may, however, with advantage place himself half an inch to an inch farther from his work than he could sit for rowing.



JOHN HIGGINS.

From a Photograph taken in Philadelphia, Pa.

JOSEPH KAYE.

From a Photograph by NOTMAN, Montreal, P. Q.

DENNIS LEARY.

From a Photograph by JORDAN, New York.

BOATING RULES.

GOVERNING OXFORD AND CAMBRIDGE UNIVERSITIES AND THE PRINCIPAL BOAT CLUBS IN LONDON.

1. All boat races shall be started in the following manner:—The starter, on being satisfied that the competitors are ready, shall give the signal to start.

2. If the starter considers the start false he shall at once recall the boats to their stations, and any boat refusing to start again shall be disqualified.

3. Any boat not at its post at the time specified shall be liable to be disqualified by the umpire.

4. The umpire may act as starter as he thinks fit. When he does not act the starter shall be subject to his control.

5. Each boat shall keep its own water throughout the race, and any boat departing from its own water will do so at its peril.

6. A boat's own water is its straight course, parallel with those of the other competing boats, from the station assigned to it at the starting to the finish.

7. The umpire shall be sole judge of a boat's own water and proper course during the race.

8. No fouling whatever shall be allowed; the boat committing a foul shall be disqualified.

9. It shall be considered a foul when, after the race has commenced, any competitor by his car, boat or person, comes into contact with the oar, boat or person of another competitor, unless in the opinion of the umpire such contact is so slight as not to influence the race.

10. The umpire may, during a race, caution any competitor when in danger of committing a foul.

11. The umpire, when appealed to, shall decide all questions as to a foul.

12. A claim of foul must be made to the judge or the umpire by the competitor himself before getting out of his boat.

13. In case of a foul the umpire shall have the power; first, to place the boats, except the boat committing the foul, which is disqualified, in the order in which they come in; second, to order the boats engaged in the race, other than the boat committing the foul, to row over again on the same or another day; third, to restart the qualified boats from the place where the foul was committed.

14. Every boat shall abide by its accidents.

15. No boats shall be allowed to accompany a competitor for the purpose of directing his course or affording him other assistance. The boat receiving such direction or assistance shall be disqualified at the discretion of the umpire.

16. The jurisdiction of the umpire extends over the race and all matters connected with it from the time the race is specified to start until its final termination, and his decision in all cases shall be final and without appeal.

17. Any competitor refusing to abide by the decision or to follow the direction of the umpire shall be disqualified.

18. The umpire, if he thinks proper, may reserve his decision, provided that in every case such decision be given on the day of the race.

N. B. The above rules have also governed the single sculling championship professional matches of England with occasional slight alterations, and were adopted at a meeting of representatives of twenty-three leading Amateur Boat Clubs, from various sections of this country, held in New York City, Aug. 29th, 1872, with the exception of adding thereto the subjoined rules:

19. Boats shall be started by their sterns, and shall have completed their course when the bows reach the finish.

20. In turning races each competitor shall have a separate turning stake and shall turn from port to starboard. Any competitor may turn any stake other than his own, but does so at his peril.

THE AMATEUR DEFINITION

AS ADOPTED BY THE NATIONAL ASSOCIATION OF AMATEUR OARSMEN.

One who does not enter in an open competition, or for either a stake, public or admission money, or entrance fee; nor compete with or against a professional for any prize; who has never taught, pursued, or assisted in the pursuit of athletic exercises as a means of livelihood; whose membership of any rowing or other athletic club was not brought about or does not continue because of any mutual agreement or understanding, expressed or implied, whereby his becoming or continuing a member of such club would be of any pecuniary benefit to him whatever, direct or indirect, and who has never been employed in any occupation involving any use of the oar and paddle.

RULES OF THE ROWING ASSOCIATION OF AMERICAN COLLEGES.

1. Any boat not at its post at the time specified shall be liable to be disqualified by the umpire.

2. All races shall be started in the following manner: The starter shall ask the question, "Are you ready?" and receiving no reply, after waiting at least three seconds, shall give the signal to start.

3 If the umpire considers the start false, he shall at once recall the crews to their stations; and any boat refusing to start again shall be disqualified.

4. A start shall be considered false if, during the first ten strokes, any of the competing boats shall be disabled by the breaking of an oar or any other accident.

5 Each boat shall keep its own water throughout the race, and any boat departing from its own water shall be disqualified.

6 A boat's own water is its buoyed course from the station assigned to it at starting to the finish, and the umpire shall be sole judge of a boat's deviation from its own water during the race.

7. No fouling whatever shall be allowed; the boat committing the foul shall be disqualified.

8. It shall be considered a foul when, after the race has commenced, any competitor, by his own oar, boat or person, comes into contact with the oar, boat or person of another competitor, unless, in the opinion of the umpire, such contact is so slight as not to influence the race.

9. A claim of foul must be made to the umpire by the competitor himself previous to his getting out of the boat.

10. The umpire, when appealed to, but not before, shall decide all questions as to a foul.

11. In the event of a foul, the umpire shall have the power: (A) To place the boats, except the boat committing the foul, which is disqualified, in the order in which they come in, provided that the fouled boat comes in first, or that the first boat had a sufficient lead at the time of the foul to warrant the race being assigned to it. (B) If the fouled boat does not come in first, or if unable to decide which boat is in error, to order such of the leading boats to row over again as in his opinion are entitled to another competition.

12. Every boat shall abide by its accidents.

13. In the event of a dead heat taking place, the same crews shall contend again, or the crew or crews refusing shall be adjudged to have lost the race.

14. No boat shall be allowed to accompany a competitor for the purpose of directing his course or affording him other assistance. Any boat receiving such direction or assistance shall be disqualified at the discretion of the umpire.

15. The jurisdiction of the umpire extends over the race, and all matters connected with it, from the time the race is specified to start until its final termination, and his decision in all cases shall be final and without appeal.

16. Any competitor refusing to abide by the decision, or to follow the directions of the umpire, shall be disqualified.

17. Boats shall be started by their sterns, and shall have completed their course when the bows reach the finish.

IMPORTANT SCULLING MATCHES

IN

THE UNITED STATES AND BRITISH PROVINCES

FOR THE PAST THIRTY YEARS.

Stephen Roberts rowed Sidney Dorlon five times, winning four; he also beat Robert Martin, Hudson River, 10 miles. Stephen Roberts is said to have beaten all opponents from his 18th to his 35th year. No records kept.

James Lee bt. Mike Conkling, off Battery, N. Y., $200, May, 1850.

James Lee won first prize American Institute Fair Regatta, off Castle Garden, Sept., 1850.

James Lee bt. William Decker, off Battery, N. Y., Oct. 5, 1850.

James Lee bt. Charles Thomas, off Castle Garden, 3 miles, $200, May, 1851.

William H. Decker bt. James Lee, off Castle Garden, N. Y., $900, July, 1851. Suit entered and stakes drawn.

James Lee bt. Price, Hudson River, N. Y., $200, Aug., 1851.

Charles Price won first prize American Institute Fair Regatta, off Castle Garden, N. Y., Sept., 1851.

Charles Thomas bt. Price, off Castle Garden, 32:30, $200, Sept., 1851.

Charles Thomas bt. Jas. Lee, off Castle Garden, 32:30, $200, Oct., '51.

Charles Thomas bt. Jas. Lee, off Castle Garden, 32m., $200, Oct., '51.

Thomas Daw bt. Thomas Burns, 8 miles, $200, Aug. 11, 1855.

Thomas Burns bt. Decker, D. Hayes and Collins, Fort Hamilton, N. Y., Aug. 19. 1855.

Andrew Fay bt. Stephen Roberts, Harlem River, N. Y., 5 miles, $50, Nov., 1855.

Andrew Fay bt. Stephen Roberts, Harlem River, N. Y., 5 miles, 44:20, $200, Dec. 18, 1855.

First shell in this country built by James McKay, and launched June 4, 1856, Williamsburg, L. I.

Thomas Burns took first prize, Staten Island Regatta, Sept. 16, 1857.

Thomas Daw bt. William Glen, 5 miles, 43:06, $1,000, Philadelphia, Pa., Oct. 28, 1857.

John Hancon won first prize, Newburg (N. Y.) Regatta, July 4, 1858.

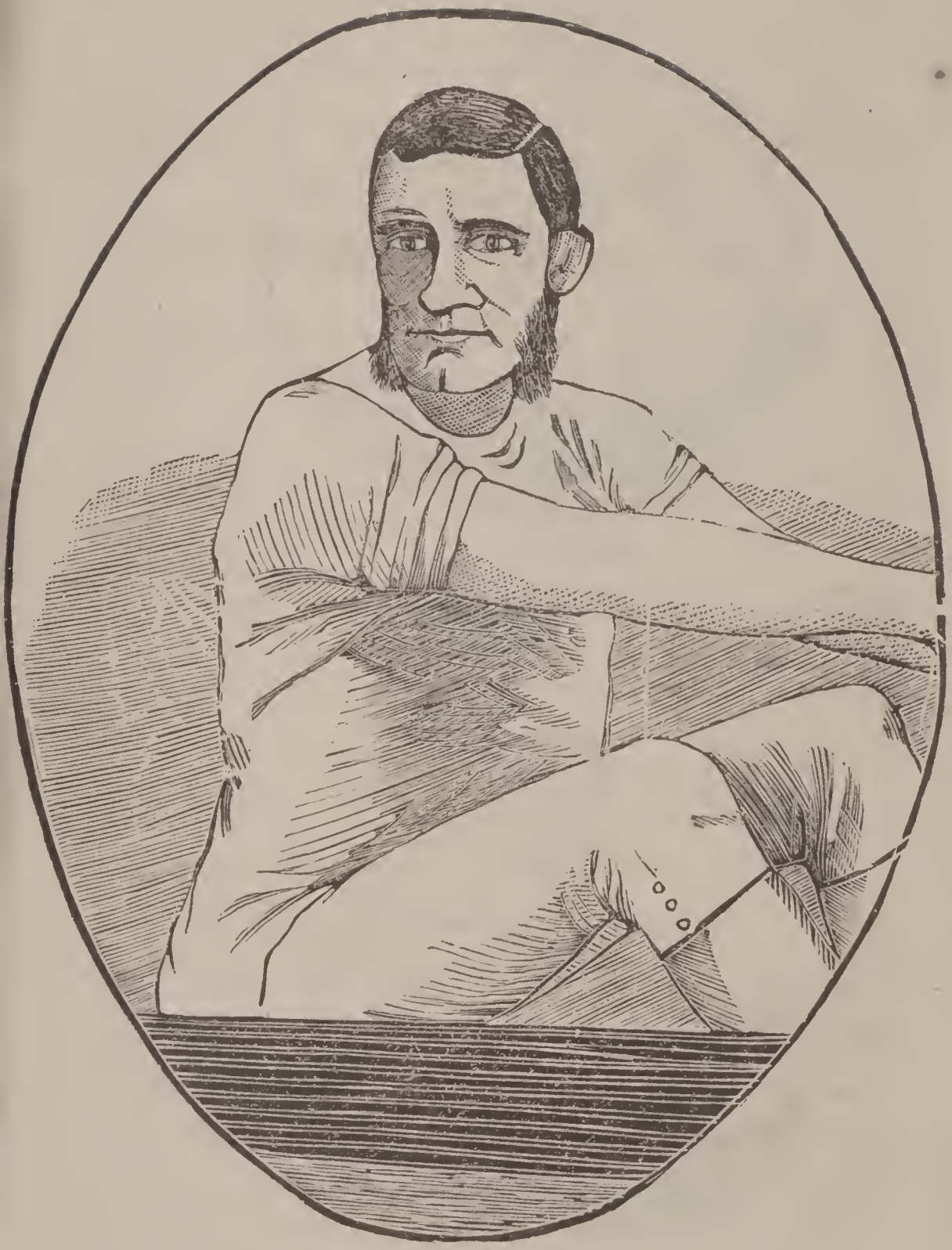
Andrew Fay won first prize, Staten Island (N. Y.) Regatta, Aug., 1858.

J. H. Seymour won first prize, Springfield (Mass.) Regatta, 2 miles, 16:10, Aug. 27, 1858.

Josh Ward bt. John Hancon, Newburg, 2 miles, 16:07, Oct. 15, 1858.

T. Grover won first prize, Worcester (Mass.) Regatta, 2 miles, 16:20, July 5, 1859.

John Hancon won first prize, Staten Island (N. Y.) Regatta, Aug. 15, 1859.



JOSEPH H. SADLER.

From a Photograph by NOTMAN, Halifax, N. S.

GIL WARD.

From a Photograph by O'Neil, New York.

BERNARD BIGLIN.

From a Photograph by Notman, Montreal, P. Q.

Josh Ward bt. Walter Brown, Hancon and Grover, Newburg, N. Y., 5 miles, $100, Sept. 20, 1859.

Andrew Fay bt. Tom Daw, Staten Island, 5 miles, 39m., $1,000, Sept. 29, 1859.

John Hancon won first prize, Albany (N. Y.) Regatta, 3 miles, 26:17, Sept , 1859.

Josh Ward won champion belt, beating John Hancon, Andrew Fay, and Thomas Daw, Staten Island, N. Y., 5 miles, 35:10, Oct. 11, 1859.

Josh Ward won first prize, Boston (Mass.) Regatta, 3 miles, 23:16, $200, Oct. 25, 1859.

Josh Ward won first prize, Worcester (Mass.) Regatta, 2 miles, 15:17½, July 25, 1860.

Denny Leary won first prize, Poughkeepsie, N. Y., 5 miles, 48:26, Sept. 5, 1860.

Andrew Fay won first prize, Poughkeepsie, N. Y., 5 miles, 39:15, Sept. 6, 1860

Josh Ward won first prize, Albany (N. Y.) Regatta, Oct. 11, 1860.

Josh Ward bt. William Burger, Poughkeepsie, N. Y., 10 miles, 83m., $500, Nov. 5, 1860.

Andrew Fay bt. William Decker, Jersey City, N. J., 4 miles, $400 Nov. 23, 1860.

William Stevens bt. J. Biglin, Poughkeepsie, 5 miles, 38:45, $200, Sept. 24, 1861.

John Biglin bt. John McGrady, Harlem River, N. Y., 5 miles, 39:47, $400, Oct. 3, 1861.

James Hamill bt. Wm. Campbell, Pittsburg, Pa., 3 miles, 24:50, $50, Oct. 5, 1861.

James Hamill bt. Josh Ward, Philadelphia, Pa., 3 miles, 37:39, $500, Aug. 13, 1862.

James Hamill won first prize, Beacon Cup, Boston (Mass.) Regatta, 2 miles, 18:05½, June 20, 1863.

Josh Ward bt. James Hamill, Poughkeepsie, N. Y., 5 miles, 42:29, $1,000, July 23, 1863.

James Hamill bt. Josh Ward, Poughkeepsie, N. Y., 5 miles, 37:38, $1,000, Sept. 28, 1863.

William Stevens bt. Gil Ward, Poughkeepsie, N. Y., 5 miles, 39:53, $400, Oct. 28, 1863.

James Hamill bt. Josh Ward, Pittsburg, Pa., 5 miles, 40:46, $1,000, July 19, 1864.

J. H. Radford won first prize, Worcester (Mass.) Regatta, 2 miles, 16:36, July 30, 1864.

Josh Ward bt. William Stevens, Poughkeepsie, N. Y., 5 miles, 38:13, $1,000, Sept. 20, 1864.

John Biglin bt. W. H. Hayes, Staten Island, 5 miles, 41:12, $1,000, Nov. 9, 1864.

John Mekeel bt. Gil Ward, Sing Sing, N. Y., 5 miles, 41m., $250, July 10, 1866.

Walter Brown bt. Josh Ward, Portland, Me., 3 miles, 22:30, $2,000, Sept. 18, 1866.

Josh Ward won first prize, Springfield (Mass.) Regatta, 2 miles, 15:59, Sept. 20, 1866.

Walter Brown bt. Josh Ward, Worcester (Mass.) Regatta, 2 miles, 15:15, Sept. 27, 1866.

John Biglin bt. J. McGrady, Hoboken, N. J., 5 miles, 39:40, $500, Nov., 1866.

William Stevens bt. Gil Ward, Poughkeepsie, N. Y., 5 miles, 38:39, $300, Nov. 1, 1866.
Walter Brown bt. James Hamill, Pittsburg, Pa., 5 miles, $2,000, May 21, 1867.
Walter Brown pulled 3 miles against time, 23m., Worcester (Mass.), July 19, 1867.
John Mekeel won first prize, Worcester (Mass.) Regatta, July 19, '67.
James Hamill bt. Walter Brown, Newburg, N. Y., 5 miles, $2,000, Sept. 9, 1867.
Henry Coulter bt. John Mekeel, Pittsburg, Pa., 5 miles, 41:50, $2,000, Oct. 30, 1867.
John Tyler Jr. won gold medal, Charles River Championship, Boston, Mass., 2 miles, 15:31, May 22, 1868.
John Tyler Jr. bt. Walter Brown, Phila., Pa., 3 miles, June 18, 1868.
James Hamill bt. H. Coulter, Phila., Pa., 5 miles, $2,000, June 19, '68.
John Tyler Jr. bt. Walter Brown, Hudson River, N. Y., 2 miles, June 24, 1868.
Charles Ward bt. J. T. Raymond, Sing Sing, N. Y., 5 miles, $500, July, 1868.
John Tyler Jr. bt. John Mekeel, Worcester, Mass., 2 miles, 14:52, $1,000, July 24, 1868.
George Brown won championship of Halifax, N. S., 2½ miles, 23:22, Aug. 1, 1868.
R. W. Hayes won championship, Toronto, C. W., 2 miles, 15:08, Aug. 22, 1868.
Walter Brown bt. H. Coulter, Pittsburg, Pa., less than 5 miles, 34:28½, $2,000, Sept. 9, 1868.
John Mekeel bt. O'Neil, Newburg, N. Y., 2 miles, 15:51, Oct. 21, '68.
John Mekeel bt. J. Biglin, B. Biglin, J. Blue and W. H. Hayes, Hudson River, N. Y., 3 miles, Nov. 25, 1868.
Walter Brown won gold medal, Boston, Mass., 2 miles, 16:48, June 15, 1869.
Walter Brown won first prize, Boston, Mass., 2 miles, 17:14, June 17, 1869.
James Hamill and Henry Coulter, Pittsburg, Pa., 5 miles, $1,000, draw, Aug. 7, 1869.
Henry Coulter bt. James Hamill, Pittsburg, Pa., 5 miles, 37:51 $2,000, Aug. 19, 1869.
Wm. Scharff bt. Wm. Stein, Pittsburg, Pa., 3 miles, 25:07, July 3, '69.
John Biglin bt. Fred Sinzer, Hudson River, N. Y., 5 miles, 46m., July 12, 1869.
John Blue bt. Fred Sinzer, Hudson River, N. Y., 5 miles, July 18, '69.
Walter Brown won first prize, Lachine, Canada, 2 miles, July 24, '69
Wm. H. Hayes won flag, Ned James' Regatta, East River, N. Y., 3 miles, Aug. 28, 1869.
Henry Coulter won first prize, Meadville, Pa., Sept. 3, 1869.
Wm. Scharff bt. Jos. Scott, Pittsburg, Pa., 1 mile, Sept. 18, 1869.
James Hamill won first prize, Louisville, Ky., 3 miles, 24:20, Sept. 24, 1869.
Thomas C. Butler won first prize, Boston (Mass.) Regatta, 2 miles, 15:41, June 17, 1870.
J. J. O'Leary won first prize, Worcester (Mass.) Regatta, 2 miles, 16:11½, July 23, 1870.
Wm. Scharff bt. H. Best, Pittsburg, Pa., 5 miles, Aug. 5, 1870.
Robert Berry bt. T. Loudon, championship of Toronto, Ont., 2 miles, Aug. 13, 1870.

Ellis Ward won first prize, M. R. C. Regatta, East River, N. Y., Aug. 20, 1870.
John Mekeel bt. Thomas C. Butler, Boston, Mass., 3 miles, 22:51, $500, Aug. 21, 1870.
T. C. Butler bt. J. A. Landers, Lowell, Mass., 2 miles, 16:05, $500, Aug. 24, 1870.
Geo. Lovatt won championship of Halifax, N. S., Sept. 1, 1870.
Wm. Scharff won single scull race, Pittsburg (Pa.) Regatta, 3 miles, 24:40, Sept. 3, 1870.
John Biglin and John Blue, Empire City Regatta, Harlem River, 4 miles, 32m. (dead heat), Sept. 6, 1870.
Ellis Ward won first prize at Bergen Point (N. J.) Regatta, 3 miles, 23:36, $100, Sept. 10, 1870.
J. J. O'Leary bt. P. Harrington, Worcester, Mass., 3 miles (short), 22:05, Sept. 14, 1870.
Ed. Murphy bt. James Ten Eyck, Cornwall, N. Y., 3 miles, $200, Oct. 5, 1870.
J. J. O'Leary bt. J. A. Landers, Worcester, Mass., 3 miles (short), 22:16, $500, Nov. 3, 1870.
T. C. Butler won championship medal, Boston, Mass., June 17, 1871.
Ellis Ward won first prize, Newburg, N. Y., 4 miles, 31:55, July 5, 1871.
Eph Morris bt. Rooney Miller, Pittsburg, Pa., 3 miles, 24m., $600, July 15, 1871.
W. B. Curtis won gold medal, N. Y. Athletic Club Regatta, Harlem River, N. Y., 2 miles, 14m., July 29, 1871.
Belyea bt. Brayley, St. John, N. B., 3 miles, 24m., Aug. 17, 1871.
Joseph H. Sadler won first prize, International Regatta, Halifax, N. S., 3 miles, 25:03, Sept. 1, 1871.
Joseph H. Sadler won first prize, International Regatta, Saratoga, N. Y., 4 miles, 30:33, $1,000 Sept. 11, 1871.
Harry Kelley won first prize, $1,000, Quebec, Dominion of Canada, Sept. 20, 1871.
Amelia Shea won first prize, Empire City Regatta, Harlem River, N. Y., 2 miles, 18:32, women's race, Sept. 25, 1871.
John Biglin won first prize, Empire City Regatta, Harlem River, 4 miles, 31:59, Sept. 25 1871.
C. E. Courtney bt. Jack Elseffer, Ithaca, N. Y., 19:51, May 11, 1872.
Wm. Scharff bt. T. C. Butler, Phila., Pa., 5 miles, $1,000, June. 7, '72.
M. F. Davis won gold medal, Portland, Me., 2 miles, 16:37, June 12, 1872.
Ellis Ward bt. J. J. O'Leary, Worcester, Mass., 3 miles (?), 21:30, $1,000, June 26, 1872.
Robert Berry bt. Henry Coulter, Buffalo, N. Y., rowing against time, 3 miles, 23½m., July 8, 1872.
J. O'Neil won first prize, Worcester, Mass., 2 miles, 15:45, July 19, '72.
R. Berry won first prize, Lachine (C. E.) Regatta, Aug. 17, 1872.
John Biglin bt. Ellis Ward, Nyack, N. Y., 5 miles, 39:05, $1,000, Sept. 19, 1872.
J. McCready bt. Wm. B. Curtis, gold medal, Harlem River, N. Y., 2 miles, Sept 21, 1872.
Fred Wolf won first prize, Cincinnati (Ohio) Regatta, Sept. 27, 1872.
W. B. Curtis bt. J. McCready, gold medal, N. Y. City, 2 miles, 17:10, Oct. 16, 1872.
James Ten Eyck bt. Gil Ward and J. T. Raymond, Peekskill, N. Y., 3 miles, 24:25, Oct. 23, 1872.

Wm. B. Curtis won champion medal, Harlem River, N. Y., 2 miles, 14:29, May 9, 1873.
T. C. Butler won champion medal, Boston, Mass., May 16, 1873.
James Ten Eyck bt. Gil Ward, Mughag's Lake, N. Y., 2 miles, 20:12, $100, June 4, 1873.
Eph Morris bt. T. C. Butler, Lowell (Mass.) Regatta, 2 miles, 15:10, July 9, 1873.
Wallace Ross bt. John Harding, St. John, N. B., July 10, 1873.
John Biglin bt. Ellis Ward, Springfield, Mass., 5 miles, $1,000, July 15, 1873.
Robert Fulton won first prize, St. John (N. B.) Regatta, Aug. 21, 1873.
Chas. E. Courtney won first prize, Saratoga (N. Y.) Regatta, 2 miles, 14:15, Sept. 11, 1873.
Geo. Brown bt. John Biglin, Halifax, N. S., 5 miles, 38:45, $2,000, Sept. 24, 1873.
Wm. B. Curtis rowed 50 miles, Chicago, Ill., 10h. 11m. 55s., April 25, 1874.
F. A. Plaisted won first prize, Boston, Mass., 1 mile, May 8, 1874.
T. C. Butler won first prize, West End Regatta, Boston, Mass., 2 miles, 16:05, June 17, 1874.
James Ten Eyck bt. Wm. Scharff, Peekskill, N. Y., 3 miles, 25m., $1,000, June 25, 1874.
M. F. Davis won first prize, Portland (Me.) Regatta, 2 miles, 15:37, July 4, 1874.
Geo. Brown bt. Wm. Scharff, Springfield, Mass., 5 miles, $4,000, July 8, 1874.
Fred A. Plaisted bt. Michael Ahearn, Boston, Mass., 5 miles, $200, July 16, 1874.
James Ten Eyck bt. O. Dyckman, Peekskill, N. Y., 3 miles, 28:50, Aug. 1, 1874.
Alex. Brayley won first prize, St. Stephens (N. B.) Regatta, 2 miles, 15:08, Aug. 4, 1874.
J. A. Ten Eyck won first prize, Rockaway (L. I.) Regatta, Aug. 9, '74.
John Brown won first prize, Worcester (Mass.) Regatta, 2 miles, 15:01½, Aug. 19, 1874.
Wallace Ross won first prize, St. John (N. B.) Regatta, Aug. 21, '74.
Chas. E. Courtney won first prize, Saratoga (N. Y.) Regatta, 2 miles, 14:44, Aug. 28, 1874.
Eph Morris bt. H. Coulter, Hulton, Pa., 5 miles, 37:03, $1,000, Sept. 11, 1874.
C. E. Courtney won first prize, Owasco Lake Regatta, Auburn, N. Y., Sept. 14, 1874.
J. A. Landers won first prize, Sebago Lake, Me., 3 miles, 19:32, Sept. 16, 1874.
Geo. Brown bt. Eph Morris, St. John, N. B., 5 miles, 37m., $4,000, Sept. 26, 1874.
John Biglin bt. J. Ten Eyck, Nyack, N. Y., 3 miles, about 23m., $1 000, Oct. 9, 1874.
Fred A. Plaisted bt. T. C. Butler, Boston, Mass., 2 miles, 14:46¾, $250, Oct. 10, 1874.
Eph Morris bt. H. Coulter, Hulton, Pa , 5 miles, $1,000, Oct. 16, '74.
Chas. E. Courtney won first prize, Saratoga (N. Y.) Regatta, 2 miles, 13:39½, Aug., 1875.
John Brown won championship of Halifax, N. S., 3 miles, Aug. 2, '75.
A. Brayley bt. P. McNulty, St. John, N. B., 3 miles, 25:20, $400, Aug. 12, 1875.

ROBERT CHAMBERS.

From a Photograph taken in Newcastle, England.

JAMES RENFORTH.

ROBERT FULTON.

Ed. Hanlan bt. T. Loudon, Ontario championship, Toronto, $200, Aug. 20, 1875.
A. Brayley bt. Landers, St. Stephens, N. B., 3 miles, Aug. 23, 1875.
M. F. Davis bt. F. A. Plaisted, Boston, Mass., 3 miles, 22:15, Aug. 24, 1875.
M. F. Davis bt. F. A. Plaisted, Portland, Me., 3 miles, Sept. 1, 1875.
M. F. Davis bt. J. J. O'Leary, Portland, Me., 3 miles, 23m., $500, Sept. 15, 1875.
Geo. Englehart bt. James O'Neil, Saratoga Lake, N. Y., 3 miles, 22:22¼, $2,000, Sept. 23, 1875.
A. Brayley bt. J. Brown, Halifax, N. S., 3 miles, $300, Sept. 24, 1875.
Ellis Ward bt. Frank Kilsby, Seneca Lake, N. Y., 2 miles, 15:28, $1,000, Oct. 8, 1875.
W. Ross won first prize, Portland Harbor, May 24, 1876.
Wallace Ross bt. A. Brayley, St. John, N. B., 5 miles, 41:03½, $400, June 15, 1876.
T. C. Butler won first prize, West End Regatta, Boston, Mass., 16m., June 17, 1876.
Warren Smith won first prize, Halifax, N. S., 3 miles, 23m., Aug. 7, 1876.
James Riley won first prize, Saratoga (N. Y.) Regatta, 2 miles, 13:21½, Aug. 9, 1876.
Ed. Hanlan won first prize, Toronto (Ont.) Regatta, 2 miles, Aug. 12, 1876.
A. T. Stewart bt. T. C. Butler, Sebago Lake, Me., 2 miles, 17:36, Aug. 16, 1876.
Ed. Hanlan won Centennial Regatta prize, Philadelphia, Pa., 3 miles, 21:09½, Sept. 4, 1876.
Wallace Ross bt. Alex. Brayley, St. John, N. B., 3¾ miles, $200, Oct. 19, 1876.
Wallace Ross bt. Fred A. Plaisted, St. John, N. B., 3¾ miles, 27:07¾, $1,000, June 6, '77.
Eph Morris bt. Wm. Scharff, Pittsburg, Pa., 5 miles, 36:45, $2,000, June 9, 1877.
J. Hanlan bt. J. Adair, 2 miles, $100, Toronto Bay, Ont., June 8, '77.
Ed. Hanlan won first prize, Silver Lake (Mass.) Regatta, 3 miles, 21:41¾, June 25, 1877.
M. F. Davis bt. Geo. Faulkner, Boston, Mass., 3 miles, 22:58½, $1,000, June 27, 1877.
P. Reagan bt. J. A. Landers, Boston, Mass., 3 miles, 22:53½, $2,000, June 29, 1877.
Wallace Ross bt. Warren Smith, St. John, N. B., 3 miles, 26m., July 25, 1877.
Chas. E. Courtney bt. Riley and Plaisted, Saratoga, N. Y., 3 miles, 20:47½, Aug. 28, 1877.
C. E. Courtney won first prize, Owasco Lake (N. Y.) Regatta, 3 miles, 21:29½, Sept. 27, 1877.
Eph Morris bt. Patrick Luther, Hulton, Pa., 5 miles, 37m., $2,000, Oct. 13, 1877.
M. F. Davis bt. Jas. Ten Eyck, Peekskill, N. Y., 3 miles, 22:29, $600, Oct. 13, 1877.
Edward Hanlan bt. Wallace Ross, Toronto, $2,000, Oct. 15, 1877.
Chas. E. Courtney won first prize, Owego Lake Regatta, 3 miles, 20:14½, Oct. 17, 1877.
M. F. Davis bt. George Hosmer, $1,000, Boston, Mass., 3 miles, 23:04, Nov. 27, 1877.

BOSTON REGATTA WINNERS.

DISTANCE—TWO MILES, TURN.

1858—Thomas Doyle, 19m. 29s.
1859—R. F. Clark, 14m. 53s.
1860—M. S. Smith, 14m. 2½s.
1861—Josh Ward, 13m. 53s.
1862—James Hamill, 16m. 15¾s.
1863—James Hamill, 15m. 5s.
1864—J. H. Radford, 20m. 2½s.
1865—James Hamill, 16m. 28s.
1866—Walter Brown, 17m. 10s.
1867—John Mekeel, 16m. 7½s.
1868—Walter Brown, 15m. 35s.
1869—Walter Brown, 15m. 24s.
1870—Walter Brown, 15m. 48s.
1871—T. C. Butler, 15m. 55½s.
1872—J. A. Ten Eyck, 15m. 16½s.
1873—Eph Morris, 14m. 46½s.
1874—John A Landers, 15m. 14½s.
1875—John Biglin, 16m. 1s.
1876—John A. Landers, 15m. 12s.
1877—Fred A. Plaisted, 14m. 24s.

IMPORTANT SCULLING MATCHES

IN

ENGLAND AND AUSTRALIA,

FROM 1831 TO THE PRESENT TIME.

In contests where no places are designated, the matches took place on the Thames Champion Course, distance four miles three furlongs.

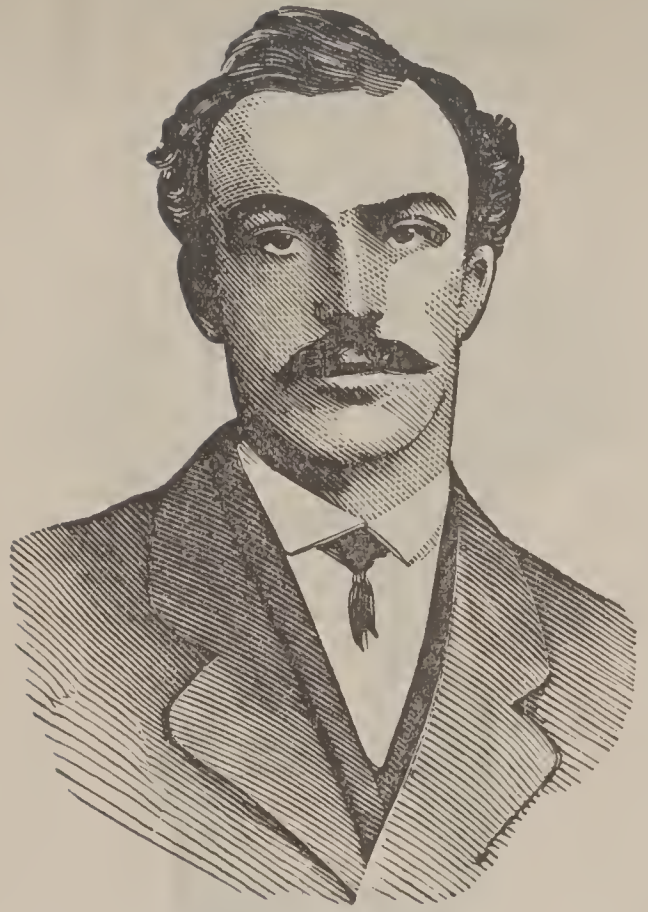
C. Campbell bt. Williams, Sept. 9, 1831.
Robert Coombes bt. C. Campbell, 26:15, Aug. 19, 1846.
Thomas Cole bt. R. Coombes, 25:15, May 24, 1852.
James Messenger bt. T. Cole, 24:25, Nov. 20, 1854.
Robert Chambers won Thames National Regatta, 1856.
Robert Chambers won Thames National Regatta, 1858.
Robert Chambers bt. Tom White, Tyne, April 19, 1859.
Robert Chambers bt. Tom White, Sept., 1860.
George Drewitt bt. Harry Clasper, Tyne, 22:32, £200, April 24, 1860.
Harry Kelley bt. J. Messenger, 24:30, May 12, 1857.
Richard Green bt. Thomas McGrath, Port Jackson, Australia, 26:30, £.00, Aug. 9, 1859.
Robert Chambers bt. H. Kelley, 25:25, Sept. 29, 1859.
Henry Clasper bt. R. Clandish, Tyne, Sept. 27, 1860.
William Lumley bt. Wm. Taylor, Tyne, Sept. 27, 1860.
R. Cooper bt. G. Strong, Tyne, Sept. 27, 1860.
G. Hammerton bt. G. Drewitt, 24:25, £100, Nov. 14, 1860.
J. H. Clasper bt. G. Drewitt, Tyne, £400, May, 1862.

Frank Kilsby bt. W. Spencer, Thames (short), 23:05, Sept. 22, 1862.
Frank Kilsby bt. W. Spencer, 27:29, Nov. 10, 1862
Tom King (pugilist), bt. E. May, Thames Course (short), 27:10, £50, Nov. 4, 1864.
David Coombes bt. Frank Kilsby, 25:16, £200, Dec., 1864.
George Drewitt bt. John MacKinney, 26:10, £100, Dec. 28, 1864.
Tom King bt. Percy, £100, Jan. 26, 1865.
Harry Kelley bt. R. Chambers, 23:26, Aug. 8, 1865.
Harry Kelley bt. James Hamill (American), Tyne, 5 miles, £500, July 4, 1866.
Harry Kelley bt. James Hamill, Tyne, 5 miles, 36m., £500, July 5, 1866.
R. Chambers bt. Joseph Sadler, 25:04 (?), Nov. 22, 1866.
H. Kelley bt. R. Chambers, Tyne, 31:47, May 6, 1867.
Harry Kelley bt. R. Chambers, Tyne, 4¼ miles, 31:49½, £400, May 6, 1867.
Harry Kelley and J. H. Sadler, £600 (foul), Nov. 27, ordered to row Nov. 28, 1867; Kelley rowed over the course alone.
W. Sadler bt. J. Biffin, £100 (foul), Feb. 11, 1868.
James Renforth bt. J. Bright, Tyne, 2 miles, 13:22, March 28, 1868.
James Renforth won Thames Regatta, £90, Aug. 4, 1868.
James Renforth bt. H. Kelley, £400, Nov. 7, 1868.
James Renforth bt. H. Kelley, 23:15, Nov. 17, 1868.
Harry Kelley bt. J. H. Sadler, 23m., £400, Dec. 1, 1868.
Mark Addy bt. W. Sadler, £200, March 15, 1869.
Robert Cooper bt. J. Taylor, Tyne, £100, April 12, 1869.
James Renforth won Thames Regatta, 24:01, Aug., 1869.
Walter Brown (American) bt. W. Sadler, Tyne, £100, Nov. 19, 1869.
William Sadler bt J. Heath, £100, March 1, 1870.
Harry Kelley bt. J. Bright, Tyne, 28:30, £400, May 2, 1870.
John Winship bt. R. Hepplewhite, Tyne, £100, May 21, 1870.
Michael Rush bt. Hickey, Sydney, Australia, May 21, 1870.
J. H. Sadler bt. Harry Kelley, 24:07½, £400, July 14, 1870.
Stephen Wright bt. William Sadler, Kings Lynn, £100, July 27, 1870.
J. H. Sadler won Thames championship, Aug. 15, 1870.
William Hickey bt. M. Rush, Sydney, Australia, 25:03, £400, Nov. 19, 1870.
Robert Bagnall bt. Ralph Hepplewhite, Tyne, £50, May 1, 1871.
Robert Bagnall bt. Mark Addy, 29:55, £100, May, 1872.
Thomas Winship bt. W. Biffin, 29.40, £100, May 7, 1872.
R. Bagnall bt. M. Addy, 2 miles, £100, Nov. 4, 1872.
M. Rush bt. Wm. Hickey, Sydney, Australia, £200, Feb. 15, 1873.
Thomas Winship bt. J. Lally, Tyne, £200, March 10, 1873.
Alexander Hogarth bt. R. W. Boyd, Weir, £50, July 23, 1873.
Harry Kelley bt. J. Taylor, Tyne, 3 miles, 29:03, £400, July 28, 1873.
Alex. Hogarth bt. R. W. Boyd, Weir, £50, Aug. 4, 1873.
Robert Bagnall bt. H. Kelley, Tyne, 3 miles 713 yds., 27:18, £400, Aug. 11, 1873.
Frank Kilsby bt. W. Sadler, 25:42, £50, Dec. 5, 1873.
Joseph H. Sadler bt. R. Bagnall, 24:15, £400 April 16, 1874.
Ralph Hepplewhite bt. A. Hogarth, Tyne, £80, July 27, 1874.
Frank Kilsby bt. W. Sadler, £50, Nov. 9, 1874.
Joseph H. Sadler bt. R. W. Boyd, 28:35, $400, Nov. 15, 1874.
Ralph Hepplewhite bt. T. Winship, Tyne, 3¼ miles, £200, March 8, 1875.
Robert Bagnall bt. W. Lumsden, Tyne, 3½m., £200, March 9, 1875.

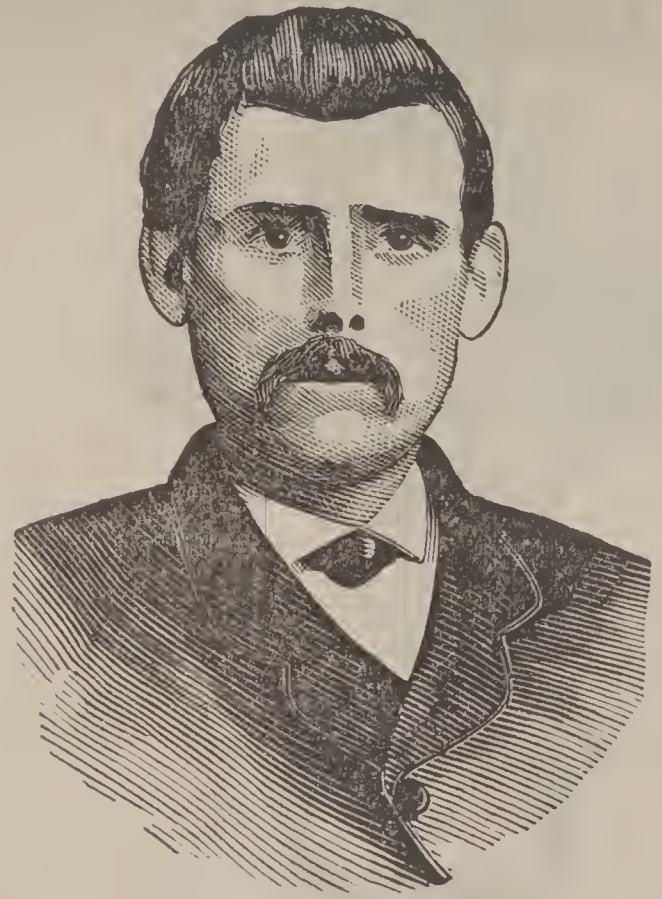
Robert Watson Boyd bt J. H. Sadler, Tyne, 1 mile, 6:10½, £200, March 22, 1875.
William Lumsden bt. A. Strong, Walney Channel, 2½ m. 14:15 3-5 £200, May 13, 1875.
John Higgins bt. C. Brian, £200, Oct. 2, 1875.
John Higgins bt. A. Strong, £200, 23:05, Oct. 19, 1875
Thomas Green bt. R. Hepplewhite, £200, Nov. 3, 1875.
William Lumsden bt. R. Bagnall, Tyne, 3miles, 24:33½, £200, May 9, 1876.
Henry Thomas bt. T. Winship, 24:35, £200, June 19, 1876.
Edward Trickett bt. J. H. Sadler. £400, June 27, 1876.
R W. Boyd bt. J. H. Sadler, 23:27, £200, Oct. 7, 1876
R. W. Boyd won first prize, Thames Regatta, Nov. 4, 1876.
R. W. Boyd won Tyne Challenge Cup, March, 1877.
Thomas Blackman bt. W. Lumsden, Tyne, 3½ miles, 26:20, £200, April 16, 1877.
John Bright bt. R. Cooper, Tyne, 3½ miles, 26:03, £100, April 17, '77.
Thomas Green bt. R. Hepplewhite, £200, May 14, 1877.
R. W. Boyd bt. J. Higgins, 28:24, May, 1877.
J. Higgins bt. Thos. Blackman, £200, June 11, 1877.
Edward Trickett bt. M. Rush, Sydney, Australia, 3½ miles, £400, 23:26, June 30, 1877.
R. W. Boyd won first prize, Thames Regatta, July, 1877.
George Tarryer bt. C. Brian, 22:55, £200, Aug. 13, 1877.
J. Higgins bt. R. W. Boyd, 24:10, Oct., 1877.
J. H. Sadler bt. H. Kelley, 24:03, £200, Nov. 5, 1877.
J. Higgins bt. R. W. Boyd. Tyne, £400, Jan. 14, 1878.
W. Elliott bt. R. Bagnall, Tyne, 30:05, £100, Jan. 15, 1878.

JAMES TAYLOR.

THOMAS WINSHIP.



ELIJAH ROSS.



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WHAT THE PAPERS SAY

ABOUT

"PRACTICAL TRAINING," AND "MANUAL OF SPORTING RULES."

BELOW will be found a few from the many encomiums of the New York press on the excellence of these works:

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1873.

OPINIONS OF THE PRESS.

Below will be found a few selections from the many flattering notices of the book entitled "The Game Cock," which will be sufficient to testify to the merits of the work.

"New York Herald," March 3.

The famous game cock which Mr. Carleton always introduces into his sketches, and sometimes with rare humor, reminds us that even the fighting chicken has his literature. Mr. Ed. James has just brought that valiant bird to our notice and we are grateful accordingly. Mr. James is an old journalist, and he has published for the benefit of the sporting world a practical treatise on the breeding, training and feeding of game cocks. The work has been prepared with great care. In addition to a thorough exposure of the many tricks resorted to by handlers in the pit, the careful author shows his intimacy with the diseases to which the game cock is subject, and the accepted course of treatment for their cure. The book also contains the standard rules governing cocking throughout the United States, Canada and Great Britain, and much other information of value to those concerned in this enlightened sport

"New York Clipper," Jan. 4.

"The Game Cock," a neatly gotten up 12mo, treating of things appertaining to game fowls, has recently been published by Ed. James. In addition to a practical and easily understood treatise on breeding, rearing, training, feeding, trimming, mains, heeling, spurs, etc., "The Game Cock" contains an exposure of cockers' tricks and the origin, symptoms and treatment of diseases incident to fowl. The revised cocking rules for the various sections of the United States and Canadas add much to the general interest of the work, and it may be looked upon as authority on such matters; the book is bound in cloth, gilt cover, representing Fielding's celebrated picture "Victory," and contains other illustrations.

"Turf Field and Farm," Jan. 3.

"The Game Cock," by Ed. James. We have perused, with considerable interest, an ably written work on the game fowl. The work is published by Ed. James, the well-known sportsman, and will be found to contain a good deal of information never before published in so compact a form. To cockers it will prove of great utility, as it gives full and minute directions how to feed, handle, trim and gaft fowls for actual contest. It also contains the rules of the pits in different states. While averse to the brutal (in our eyes) contests of game birds, we suppose there is no way to prove actual gameness in birds save by the steel tests. Hence this little work will be of great service, and will be perused with interest by those engaged in raising game birds.

"N. Y. Sunday News," Feb. 2.

"The Game Cock."—We have now before us a neat little book with the above title, written by Ed. James, for the past twenty years connected with the sporting press. It teaches how to breed, rear, train, feed and pit game fowls, giving also all the pit rules. It is a volume containing a great mass of information, and all interested in game fowls should have a copy.

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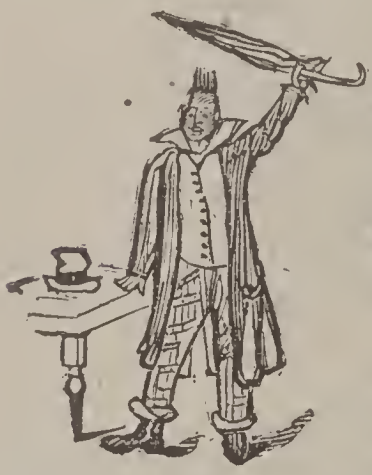

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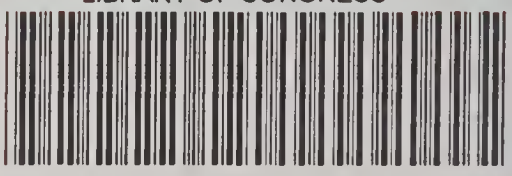

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